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169622

119

From: Seharaseyon, Jegatheesan
Sent: Wednesday, October 26, 2005 10:45 AM
To: STIC-Biotech/ChemLib
Subject: Re: 10/719472

Importance: High

Please search SEQ ID NO: 2 and 3 in commercial databases.

Thanks,
Seyon.

J. Seharaseyon
Art Unit 1647
Remsen 4C61
Mailbox 4C70
Phone: (571)-272-0892
Fax: (571)-273-0892

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OCT 26 2005
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(STIC)

Searcher: _____
Searcher Phone: _____
Date Searcher Picked up: _____
Date completed: _____
Searcher Prep Time: _____
Online Time: _____

Type of Search
NA# _____ AA# _____
S/L: _____ Oligomer: _____
Encode/Transl: _____
Structure #: _____ Text: _____
Inventor: _____ Litigation: _____

Vendors and cost where applicable
STN: _____
DIALOG: _____
QUESTEL/ORBIS: _____
LEXIS/NEXIS: _____
SEQUENCE SYSTEM: _____
WWW/Internet: _____
Other (Specify): _____

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:51:03 ; Search time 24.5 Seconds
(without alignments)
524.067 Million cell updates/sec

Title: US-10-719-472-2

Perfect score: 907

Sequence: 1 CYLSRKLMLDARENKLLDR.....TVSTTLQKRLTKWGDLNSP 172

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA:*

- 1: /cgn2_6/prodata/1/iaa/5A_COMB.pep:*
- 2: /cgn2_6/prodata/1/iaa/5B_COMB.pep:*
- 3: /cgn2_6/prodata/1/iaa/6A_COMB.pep:*
- 4: /cgn2_6/prodata/1/iaa/6B_COMB.pep:*
- 5: /cgn2_6/prodata/1/iaa/PCUS_COMB.pep:*
- 6: /cgn2_6/prodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	907	100.0	172	1	US-08-438-753B-2
2	907	100.0	172	1	US-08-443-883A-2
3	907	100.0	172	2	US-08-631-328-2
4	907	100.0	172	2	US-08-455-524B-2
5	907	100.0	172	2	US-08-455-021B-2
6	907	100.0	172	3	US-09-045-467-2
7	907	100.0	172	3	US-08-954-393A-18
8	907	100.0	172	3	US-08-616-904-2
9	900	99.2	172	4	US-09-599-413-2
10	898	99.0	172	4	US-09-599-413-7
11	896	98.8	172	4	US-09-599-413-9
12	896	98.8	172	4	US-09-599-413-18
13	896	98.8	172	4	US-09-599-413-20
14	895	98.7	172	4	US-09-599-413-4
15	894	98.6	172	4	US-09-599-413-5
16	894	98.6	172	4	US-09-599-413-10
17	894	98.6	172	4	US-09-599-413-19
18	892	98.3	172	4	US-09-599-413-6
19	890	98.1	172	4	US-09-599-413-8
20	857.5	94.5	196	4	US-09-487-792-12
21	857.5	94.5	196	4	US-09-598-594-12
22	723	79.7	195	4	US-09-487-792-11
23	723	79.7	195	4	US-09-598-594-11
24	612	67.5	172	1	US-08-438-753B-4
25	612	67.5	172	1	US-08-438-753B-44
26	612	67.5	172	1	US-08-443-883A-4
27	612	67.5	172	1	US-08-443-883A-44

28	612	67.5	172	2	US-08-631-328-4	Sequence 4, Appl
29	612	67.5	172	2	US-08-631-328-44	Sequence 44, Appl
30	612	67.5	172	2	US-08-455-524B-4	Sequence 4, Appl
31	612	67.5	172	2	US-08-455-524B-44	Sequence 44, Appl
32	612	67.5	172	2	US-08-455-021B-4	Sequence 4, Appl
33	612	67.5	172	2	US-08-455-021B-44	Sequence 44, Appl
34	612	67.5	172	3	US-09-045-467-4	Sequence 4, Appl
35	612	67.5	172	3	US-09-045-467-44	Sequence 44, Appl
36	612	67.5	172	3	US-08-616-904-4	Sequence 4, Appl
37	612	67.5	195	1	US-08-438-753B-12	Sequence 12, Appl
38	612	67.5	195	1	US-08-443-883A-12	Sequence 12, Appl
39	612	67.5	195	2	US-08-631-328-12	Sequence 12, Appl
40	612	67.5	195	2	US-08-455-524B-12	Sequence 12, Appl
41	612	67.5	195	3	US-08-455-021B-12	Sequence 12, Appl
42	612	67.5	195	3	US-09-045-467-12	Sequence 12, Appl
43	604	66.6	171	1	US-08-438-753B-30	Sequence 30, Appl
44	604	66.6	171	1	US-08-443-883A-30	Sequence 30, Appl
45	604	66.6	171	2	US-08-631-328-30	Sequence 30, Appl

ALIGNMENTS

RESULT 1
US-08-438-753B-2
; Sequence 2, Application US/08438753B
; Patent No. 5705363
; GENERAL INFORMATION:
; APPLICANT: Inakawa, Kazuhito
; TITLE OF INVENTION: Interferon Tau Compositions and
; TITLE OF INVENTION: Methods of Use
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSER: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/438,753B
; FILING DATE: 10-MAY-1995
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 09-MAR-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Sholtz, Charles K.
; REGISTRATION NUMBER: 38,615
; REFERENCE/DOCKET NUMBER: 5600-0001.30
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-324-0880
; TELEFAX: 415-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein

ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: amino acid sequence of a mature
INDIVIDUAL ISOLATE: OviFntau protein
US-08-438-753B-2

Query Match 100.0%; Score 907; DB 1; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOENVGEGDQKQOAFVLYEM 60
DB 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOENVGEGDQKQOAFVLYEM 60
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGGLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGGLNSP 172

RESULT 2

US-08-443-883A-2
Sequence 2, Application US/08443883A
Patent No. 5738845

GENERAL INFORMATION:
APPLICANT: Bazer, Fuller W.
APPLICANT: Johnson, Howard M.
APPLICANT: Pontzer, Carol H.
APPLICANT: Ott, Troy L.
APPLICANT: Van Heeke, Gino
APPLICANT: Inakawa, Kazuhito
TITLE OF INVENTION: Interferon Tau Compositions and
METHODS OF USE
NUMBER OF SEQUENCES: 44
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Ave., Suite 250
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94306

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/443,883A
FILING DATE:

CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/139,891
FILING DATE: 19-OCT-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/847,741
FILING DATE: 09-MAR-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/318,050
FILING DATE: 02-MAR-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/969,890
FILING DATE: 30-OCT-1992
ATTORNEY/AGENT INFORMATION:
NAME: Fabian, Gary R.
REGISTRATION NUMBER: 33,875
REFERENCE/DOCKET NUMBER: 5600-0001.30
TELEPHONE: 415-324-0880
TELEFAX: 415-324-0960
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:

LENGTH: 172 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: amino acid sequence of a mature
INDIVIDUAL ISOLATE: OviFntau protein
US-08-443-883A-2

Query Match 100.0%; Score 907; DB 1; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOENVGEGDQKQOAFVLYEM 60
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGGLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGGLNSP 172

RESULT 3

US-08-631-328-2
Sequence 2, Application US/08631328
Patent No. 5939286

GENERAL INFORMATION:
APPLICANT: Johnson, Howard M.
APPLICANT: Pontzer, Carol H.
APPLICANT: Subramaniam, Prem S.
TITLE OF INVENTION: Hybrid Interferon Compositions and
METHODS OF USE
NUMBER OF SEQUENCES: 55
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Ave., Suite 250
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94306

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/631,328
FILING DATE: 12-APR-1996

CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/438,753
FILING DATE: 10-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
REGISTRATION NUMBER: 38,615
REFERENCE/DOCKET NUMBER: 5600-0001.34
TELEPHONE: 415-324-0880
TELEFAX: 415-324-0960
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 172 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: amino acid sequence of a mature
INDIVIDUAL ISOLATE: OviFntau protein
US-08-631-328-2


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Query Match      100.0%; Score 907; DB 2; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVTSTTLOKRLTKMGDDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVTSTTLOKRLTKMGDDLNSP 172

RESULT 4
US-08-455-524B-2
; Sequence 2, Application US/08455524B
; Patent No. 5942223
; GENERAL INFORMATION:
; APPLICANT: Bazer, Fuller W.
; APPLICANT: Johnson, Howard M.
; APPLICANT: Pontzer, Carol H.
; APPLICANT: Ott, Troy L.
; APPLICANT: Van Heeke, Gino
; TITLE OF INVENTION: Interferon Tau Compositions and
; TITLE OF INVENTION: Methods of Use
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent in Release #1.0, Version #1.25
; APPLICATION NUMBER: US/08/455,524B
; FILING DATE: 31-MAY-1995
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/438,753
; FILING DATE: 10-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 09-MAR-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Sholtz, Charles K.
; REGISTRATION NUMBER: 38,615
; REFERENCE/DOCKET NUMBER: 5600-0001.32
; TELEPHONE: 415-324-0880
; TELEFAX: 415-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
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TOPOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: amino acid sequence of a mature
INDIVIDUAL ISOLATE: OviFntau protein
US-08-455-524B-2

Query Match      100.0%; Score 907; DB 2; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 CYLSRKMLDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDQLQKDAFFVLYEM 60
QY 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVTSTTLOKRLTKMGDDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVTSTTLOKRLTKMGDDLNSP 172

RESULT 5
US-08-455-021B-2
; Sequence 2, Application US/08455021B
; GENERAL INFORMATION:
; APPLICANT: Bazer, Fuller W.
; APPLICANT: Johnson, Howard M.
; APPLICANT: Pontzer, Carol H.
; APPLICANT: Ott, Troy L.
; APPLICANT: Van Heeke, Gino
; TITLE OF INVENTION: Interferon Tau Compositions and
; TITLE OF INVENTION: Methods of Use
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent in Release #1.0, Version #1.25
; APPLICATION NUMBER: US/08/455,021B
; FILING DATE: 31-MAY-1995
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 09-MAR-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Sholtz, Charles K.
; REGISTRATION NUMBER: 38,615
; REFERENCE/DOCKET NUMBER: 5600-0001.31
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-324-0880
; TELEFAX: 415-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; INFORMATION FOR SEQ ID NO: 2:
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; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: Ovifntau protein
;
US-08-455-021B-2

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Query Match      100.0%; Score 907; DB 2; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

QY 61 LQOSFNLFYTEHSSAAMDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 61 LQOSFNLFYTEHSSAAMDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172

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RESULT 6
US-09-045-467-2
; Sequence 2, Application US/09045467
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; TITLE OF INVENTION: Interferon Tau Compositions and
; METHODS OF USE
;
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
;
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/045,467
; FILING DATE: 20-Mar-1998
; CLASSIFICATION: <Unknown>
;
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/455,021
; FILING DATE: 31-MAY-1995
; APPLICATION NUMBER: US 08/438,753
; FILING DATE: 10-MAY-1995
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 03-MAR-1992
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
;
; ATTORNEY/AGENT INFORMATION:
; NAME: Dehlinger, Peter J.
; REGISTRATION NUMBER: 28,006
; REFERENCE/DOCKET NUMBER: 5600-0001.36
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
;
; INFORMATION FOR SEQ ID NO: 2:

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; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: Ovifntau protein
;
US-09-045-467-2

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Query Match      100.0%; Score 907; DB 3; Length 172;
Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
Db 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

QY 61 LQOSFNLFYTEHSSAAMDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 61 LQOSFNLFYTEHSSAAMDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172

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RESULT 7
US-08-954-395A-18
; Sequence 18, Application US/08954395A
; Patent No. 6204022
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; APPLICANT: Subramaniam, Prem S.
; APPLICANT: Pontzer, Carol H.
; APPLICANT: Villarete, Lorelie H.
; APPLICANT: Campos, Jackeline
; APPLICANT: Chung, Albert D.
; APPLICANT: Li, Wayne W.
; APPLICANT: Liu, Philip T.
; TITLE OF INVENTION: LOW-TOXICITY HUMAN INTERFERON-ALPHA
; TITLE OF INVENTION: ANALOG
; NUMBER OF SEQUENCES: 35
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates LLP
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
;
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/954,395A
; FILING DATE: Filed Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/631,328
; FILING DATE: 12-APR-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Dehlinger, Peter J
; REGISTRATION NUMBER: 27008
; REFERENCE/DOCKET NUMBER: 5600-0001.35
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
;
; INFORMATION FOR SEQ ID NO: 18:
; SEQUENCE CHARACTERISTICS:

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; LENGTH: 172 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; IMMEDIATE SOURCE:
; LIBRARY: GenBank Accessn. Y00287, PID g1358
; CLONE: Ovine IFN-tau, mature protein
US-08-954-395A-18

Query Match
Best Local Similarity 100.0%; Score 907; DB 3; Length 172;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDQLOKQDAFFVLYEM 60
DB 1 CYLSRKLMDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDQLOKQDAFFVLYEM 60

QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGGEEDSELGNMDDPIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172

RESULT 8
US-08-616-904-2
; Sequence 2, Application US/08616904
; Patent No. 6372206
; GENERAL INFORMATION:
; APPLICANT: Soos, Jeanne M.
; APPLICANT: Schiffbauer, Joel
; APPLICANT: Johnson, Howard M.
; TITLE OF INVENTION: Orally-Administered Interferon-Tau
; TITLE OF INVENTION: Compositions and Methods
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/616,904
; FILING DATE: 15-MAR-1996
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Sholtz, Charles K.
; REGISTRATION NUMBER: 38,615
; REFERENCE/DOCKET NUMBER: 5600-0003
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-324-0880
; TELEFAX: 415-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: OviFntau protein
US-08-616-904-2

Query Match
Best Local Similarity 100.0%; Score 907; DB 3; Length 172;
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Best Local Similarity 100.0%; Pred. No. 4.6e-100;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDQLOKQDAFFVLYEM 60
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QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGGEEDSELGNMDDPIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172

RESULT 9
US-09-599-413-2
; Sequence 2, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: Interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-2

Query Match
Best Local Similarity 99.2%; Score 900; DB 4; Length 172;
Matches 171; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDQLOKQDAFFVLYEM 60
DB 1 CYLSRKLMDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDQLOKQDAFFVLYEM 60

QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGGEEDSELGNMDDPIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172

RESULT 10
US-09-599-413-7
; Sequence 7, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: Interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 7
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-7
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Db	1	CYLRSKLMLDARENKLLDRMWRNLSPHSCIQDRKDFGLPQEMVSGDQLQKQDAAPVLYEM	60	
QY	61	LQGSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVNGEEDSELGNMDPIVTV	120	
Db	61	LQGSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVNGEEDSELGNMDPIVTV	120	
QY	121	KKYPQGIYDYLQKGYSDCAWEIIVRVEMRALTVTSTTLQKRLTKMGGLNSP	172	
Db	121	KKYPQGIYDYLQKGYSDCAWEIIVRVEMRALTVTSTTLQKRLTKMGGLNSP	172	

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RESULT 11
US-09-599-413-9
; Sequence 9, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 9
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-9

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	Query Match	98.8%	Score 896;	DB 4;	Length 172;
	Best Local Similarity	98.8%;	Pred. No. 9,4e-99;		
	Matches 170;	Conservative 1;	Mismatches 1;	Indels 0;	Gaps 0;
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QY	61	LQGSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDLHLDTCRGQVNGEEDSELGNMDPIVTV	120		
Db	61	LQGSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDLHLDTCRGQVNGEEDSELGNMDPIVTV	120		
QY	121	KKYFQGIYDLYQKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKWGDLNSP	172		
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RESULT 12
US-09-599-413-18
; Sequence 18, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-18

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	Query Match	98.8%;	Score 896;	DB 4;	Length 172;
	Best Local Similarity	98.8%;	Pred. No. 9.4e-99;		
	Matches 170;	Conservative 1;	Mismatches 1;	Indels 0;	Gaps 0;
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Db	1	CYLSQKMLDARENKLLDRMNRLS	PHSCLQDRKDFGL	POEMWEGDQLQKQDAPFVLYEM	60
Qy	61	LQOSFNLFTYEHSSAAWDTTLL	EQLTGGLQQLDHLDT	CRGQWMBEEDSELGNMDPIVTV	120
Db	61	LQOSFNLFTYEHSSAAWDTTLL	EQLTGGLQQLDHLDT	CRGQWMBEEDSELGNMDPIVTV	120
Qy	121	KKYFQGIYDYLOBKGYSDCAWEI	VRVEMMRALTVSTT	LQKRLTYMGDGLNSP	172
Db	121	KKYFQGIYDYLOBKGYSDCAWEI	VRVEMMRALTVSTT	LQKRLTYMGDGLNSP	172

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RESULT 13
US-09-599-413-20
; Sequence 20, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: Patencin Ver. 2.1
; SEQ ID NO 20
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-20

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	Query Match	98.8%	Score 896;	DB 4;	Length 172;
	Best Local Similarity	98.8%;	Pred. No. 9.4e-99;		
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Db	1	CYLRSKMLMDARENLKLLDPMNRKLSPHSCQLQDRKDFGLPQEMWEGDQLQKQDAPFVLVEM	60		
Qy	61	LOQSFNLFTTEHSSAANDTTTLEQLCTGLQQQLDHLDTCRGQWGBEDSBLGNMDPIVTV	120		
Db	61	LOQSFNLFTTEHSSAANDTTTLEQLCTGLQQQLDHLDTCRGQWGBEDSBLGNMDPIVTV	120		
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; Sequence 4, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine

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US-09-599-413-4

Query Match 98.7%; Score 895; DB 4; Length 172;
Best Local Similarity 98.8%; Pred. No. 1.2e-98;
Matches 170; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
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QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVGMGEDESELGNMDEPIVTV 120
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DB 121 KKYFQGIYDYLQEKGYSDCAWEIVRVMRALTIVSTTLQKRLTKMGDDLNSP 172

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US-09-599-413-5
; Sequence 5, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: Interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 5
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-5

Query Match 98.6%; Score 894; DB 4; Length 172;
Best Local Similarity 98.8%; Pred. No. 1.6e-98;
Matches 170; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
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DB 1 CYLSRKMLDARENKLLDRMNRSLPHSCLQDRKDFGLPQEMVEGDLQDQAFFVLYEM 60
QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVGMGEDESELGNMDEPIVTV 120
DB 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVGMGEDESELGNMDEPIVTV 120
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DB 121 KKYFQGIYDYLQEKGYSDCAWEIVRVMRALTIVSTTLQKRLTKMGDDLNSP 172

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GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM protein - protein search, using sw model

Run on: October 28, 2005, 14:52:27 ; Search time 113 Seconds
(without alignments)
636.313 Million cell updates/sec

Title: US-10-719-472-2

Perfect score: 907

Sequence: 1 CYSLSKRLMDARENLKLLDR.....TVSTTLQKRLTKWGDLSNP 172

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Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

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Listing first 45 summaries

Database : Published Applications AA:*

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- 3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
- 4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep.*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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4	907	100.0	172	15	US-10-346-269-2
5	907	100.0	172	15	US-10-346-269-3
6	907	100.0	172	15	US-10-694-247-2
7	907	100.0	172	16	US-10-683-214-1
8	907	100.0	172	16	US-10-719-472-2
9	907	100.0	172	16	US-10-825-068-2
10	907	100.0	172	17	US-10-884-741-2
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13	907	100.0	172	18	US-10-824-710-2	Sequence 2, Appli
14	907	100.0	172	18	US-10-991-653-2	Sequence 2, Appli
15	907	100.0	172	18	US-10-794-495-2	Sequence 2, Appli
16	907	100.0	172	20	US-11-078-608-2	Sequence 2, Appli
17	907	100.0	172	20	US-11-040-706-2	Sequence 2, Appli
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30	857.5	94.5	196	16	US-10-197-816-12	Sequence 12, Appli
31	786	86.7	152	16	US-10-676-705-90	Sequence 90, Appli
32	786	86.7	152	16	US-10-677-093-54	Sequence 54, Appli
33	786	86.7	152	17	US-10-820-467-47	Sequence 47, Appli
34	723	79.7	195	9	US-09-908-594-11	Sequence 11, Appli
35	723	79.7	195	16	US-10-197-816-11	Sequence 11, Appli
36	649	71.6	171	14	US-10-131-409-58	Sequence 58, Appli
37	649	71.6	171	15	US-10-139-854-58	Sequence 58, Appli
38	649	71.6	171	15	US-10-150-813-58	Sequence 58, Appli
39	649	71.6	171	15	US-10-150-811-58	Sequence 58, Appli
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41	612	67.5	172	9	US-09-746-919-44	Sequence 44, Appli
42	612	67.5	172	14	US-10-029-890-4	Sequence 4, Appli
43	612	67.5	172	15	US-10-694-247-4	Sequence 4, Appli
44	612	67.5	172	18	US-10-794-495-4	Sequence 4, Appli
45	612	67.5	172	18	US-10-794-495-44	Sequence 44, Appli

ALIGNMENTS

RESULT 1
US-09-746-919-2
; Sequence 2, Application US/09746919
; Patent No. US20020013452A1
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; APPLICANT: Pontzer, Carol H.
; TITLE OF INVENTION: Interferon Tau Compositions and
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/746,919
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/045,467
; FILING DATE:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/438,753
; FILING DATE: 10-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/139,891

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/ FILING DATE: 19-OCT-1993
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/847,741
/ FILING DATE: 09-MAR-1992
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/318,050
/ FILING DATE: 02-MAR-1989
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/969,890
/ FILING DATE: 30-OCT-1992
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Dehlinger, Peter J.
/ REGISTRATION NUMBER: 28,006
/ REFERENCE/DOCKET NUMBER: 5600-0001.36
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 650-324-0960
/ TELEFAX: 650-324-0960
/ INFORMATION FOR SEQ ID NO: 2:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 172 amino acids
/ TYPE: amino acid
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ ORIGINAL SOURCE:
/ INDIVIDUAL ISOLATE: amino acid sequence of a mature
/ INDIVIDUAL ISOLATE: Ovifntau protein
US-09-746-919-2

Query Match 100.0%; Score 907; DB 9; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQOAFPVLYEM 60

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DB 61 LQOSFNLFYTEHSSAAMDTTTLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVEMMRALTTSVTTLOKRLTKMGGDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVEMMRALTTSVTTLOKRLTKMGGDLNSP 172

RESULT 3
US-10-029-890-2
/ Sequence 2, Application US/10029890
/ Publication No. US20030012766A1
/ GENERAL INFORMATION:
/ APPLICANT: Soos, Jeanne M.
/ Johnson, Howard M.
/ Schiffenbauer, Joel
/ TITLE OF INVENTION: Orally-Administered Interferon-Tau
/ NUMBER OF SEQUENCES: 6
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Dehlinger & Associates
/ STREET: 350 Cambridge Ave., Suite 250
/ CITY: Palo Alto
/ STATE: CA
/ COUNTRY: USA
/ ZIP: 94306
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/10/029,890
/ FILING DATE: 21-Dec-2001
/ CLASSIFICATION: <Unknown>
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US/08/616,904
/ FILING DATE: 15-MAR-1996
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Sholtz, Charles K.
/ REGISTRATION NUMBER: 38,615
/ REFERENCE/DOCKET NUMBER: 5600-0003
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 415-324-0880
/ TELEFAX: 415-324-0960
/ INFORMATION FOR SEQ ID NO: 2:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 172 amino acids
/ TYPE: amino acid
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ ORIGINAL SOURCE:
/ INDIVIDUAL ISOLATE: amino acid sequence of a mature
/ INDIVIDUAL ISOLATE: Ovifntau protein
/ SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-10-029-890-2

Query Match 100.0%; Score 907; DB 14; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQOAFPVLYEM 60
DB 1 CYLSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQOAFPVLYEM 60

QY 61 LQOSFNLFYTEHSSAAMDTTTLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
DB 61 LQOSFNLFYTEHSSAAMDTTTLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
```


QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172
|
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172

RESULT 4

US-10-346-269-2
; Sequence 2, Application US/10346269
; Publication No. US20030219405A1
; GENERAL INFORMATION:
; APPLICANT: Sokawa, Yoshihiro
; APPLICANT: Liu, Chih-Ping
; TITLE OF INVENTION: Oral Administration of Interferon-tau
; FILE REFERENCE: 55600.8009.US00
; CURRENT APPLICATION NUMBER: US/10/346,269
; CURRENT FILING DATE: 2003-01-16
; PRIOR APPLICATION NUMBER: US 60/349,658
; PRIOR FILING DATE: 2002-01-16
; NUMBER OF SEQ ID NOS: 3
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: amino acid encoded by SEQ ID NO:1
US-10-346-269-2

Query Match 100.0%; Score 907; DB 15; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAPFVLYEM 60
|
Db 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAPFVLYEM 60
|
QY 61 LQGSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
|
Db 61 LQGSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
|
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172
|
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172

RESULT 5

US-10-346-269-3
; Sequence 3, Application US/10346269
; Publication No. US20030219405A1
; GENERAL INFORMATION:
; APPLICANT: Sokawa, Yoshihiro
; APPLICANT: Liu, Chih-Ping
; TITLE OF INVENTION: Oral Administration of Interferon-tau
; FILE REFERENCE: 55600.8009.US00
; CURRENT APPLICATION NUMBER: US/10/346,269
; CURRENT FILING DATE: 2003-01-16
; PRIOR APPLICATION NUMBER: US 60/349,658
; PRIOR FILING DATE: 2002-01-16
; NUMBER OF SEQ ID NOS: 3
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Ovis aries
US-10-346-269-3

Query Match 100.0%; Score 907; DB 15; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAPFVLYEM 60
|
|
|

Db 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAPFVLYEM 60
|
QY 61 LQGSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
|
Db 61 LQGSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
|
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172
|
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172

RESULT 6

US-10-694-247-2
; Sequence 2, Application US/10694247
; Publication No. US20040086534A1
; GENERAL INFORMATION:
; APPLICANT: Soos, Jeanne M.
; Schiftenbauer, Joel
; Johnson, Howard M.
; TITLE OF INVENTION: Orally-Administered Interferon-Tau
; Compositions and Methods
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA: US/10/694,247
FILING DATE: 27-Oct-2003
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/616,904
FILING DATE: 15-MAR-1996
ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
REGISTRATION NUMBER: 38,615
REFERENCE/DOCKET NUMBER: 5600-0003
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-324-0880
TELEFAX: 415-324-0960
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 172 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: amino acid sequence of a mature OviFntau protein
SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-10-694-247-2

Query Match 100.0%; Score 907; DB 15; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAPFVLYEM 60
|
Db 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAPFVLYEM 60
|
QY 61 LQGSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
|
Db 61 LQGSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
|
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDLNSP 172


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; ORGANISM: Ovis aries
US-10-884-741-2

Query Match      100.0%; Score 907; DB 17; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
D b 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
QY 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
D b 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
D b 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172

RESULT 11
US-10-825-382-2
; Sequence 2, Application US/10825382
; Publication No. US20050118137A1
; GENERAL INFORMATION:
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of Treatment Using Interferon-TAU
; FILE REFERENCE: 55600-8014.US01
; CURRENT APPLICATION NUMBER: US/10/825,382
; CURRENT FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Ovis aries
US-10-825-382-2

Query Match      100.0%; Score 907; DB 17; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
D b 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
QY 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
D b 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
D b 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172

RESULT 12
US-10-825-457-2
; Sequence 2, Application US/10825457
; Publication No. US20050118138A1
; GENERAL INFORMATION:
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of Treatment Using Interferon-TAU
; FILE REFERENCE: 55600-8014.US02
; CURRENT APPLICATION NUMBER: US/10/825,457
; CURRENT FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
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; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Ovis aries
US-10-825-457-2

Query Match      100.0%; Score 907; DB 17; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
D b 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
QY 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
D b 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
D b 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172

RESULT 13
US-10-824-710-2
; Sequence 2, Application US/10824710
; Publication No. US20050142109A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of Treatment Using Interferon-TAU
; FILE REFERENCE: 55600-8014.US00
; CURRENT APPLICATION NUMBER: US/10/824,710
; CURRENT FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Ovis aries
US-10-824-710-2

Query Match      100.0%; Score 907; DB 18; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
D b 1 C Y L S R K L M L D A R E N L K L L D R M N R L S P H S C L Q D R K D F G L P Q E M V E G D L Q K D Q A F P V L Y E M 60
QY 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
D b 61 L Q O S F N L F Y T E H S S A A W D T T L L E Q L C T G L Q Q O L D H L D T C R G V M G E D S E L G N M D P I V T V 120
QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
D b 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172

RESULT 14
US-10-991-653-2
; Sequence 2, Application US/10991653
; Publication No. US20050147588A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Lopez, Henry W.
; TITLE OF INVENTION: Methods for Treatment of Obesity and for Promotion of Weight Loss
; FILE REFERENCE: 55600-8012.US01
; CURRENT APPLICATION NUMBER: US/10/991,653
; CURRENT FILING DATE: 2004-11-17
; PRIOR APPLICATION NUMBER: US 60/523,077
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; PRIOR FILING DATE: 2003-11-17
; PRIOR APPLICATION NUMBER: US 60/532,851
; PRIOR FILING DATE: 2003-12-24
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Ovis Aries
US-10-991-653-2

Query Match      100.0%; Score 907; DB 18; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CYSRKMLMDARENKLLDRMNRSLPHSCLQDRKDFGLPQEMVEGDLQKQDAFFVLVEM 60
Db 1 CYSRKMLMDARENKLLDRMNRSLPHSCLQDRKDFGLPQEMVEGDLQKQDAFFVLVEM 60

Qy 61 LQGSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 61 LQGSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120

Qy 121 KKYFGIYDYLQEKGYSDCAMEIVRVMNRALTSTTLQKRLTKMGGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAMEIVRVMNRALTSTTLQKRLTKMGGDLNSP 172

RESULT 15
US-10-794-495-2
; Sequence 2. Application US/10794495
; Publication No. US20040146989A1
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; Pontzer, Carol H.
; TITLE OF INVENTION: Interferon Tau Compositions and
; Methods of Use
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSER: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA: US/10/794,495
; APPLICATION NUMBER: US/10/794,495
; FILING DATE: 03-Mar-2004
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/09/045,467
; FILING DATE: 20-Mar-1998
; APPLICATION NUMBER: US 08/455,021
; FILING DATE: 31-MAY-1995
; APPLICATION NUMBER: US 08/438,753
; FILING DATE: 10-MAY-1995
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 09-MAR-1992
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Dehlinger, Peter J.
; REGISTRATION NUMBER: 28,006
; REFERENCE/DOCKET NUMBER: 5600-0001.36
```

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; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; OviFNTau protein
; SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-10-794-495-2

Query Match      100.0%; Score 907; DB 18; Length 172;
Best Local Similarity 100.0%; Pred. No. 9.4e-89;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CYSRKMLMDARENKLLDRMNRSLPHSCLQDRKDFGLPQEMVEGDLQKQDAFFVLVEM 60
Db 1 CYSRKMLMDARENKLLDRMNRSLPHSCLQDRKDFGLPQEMVEGDLQKQDAFFVLVEM 60

Qy 61 LQGSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 61 LQGSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120

Qy 121 KKYFGIYDYLQEKGYSDCAMEIVRVMNRALTSTTLQKRLTKMGGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAMEIVRVMNRALTSTTLQKRLTKMGGDLNSP 172

Search completed: October 28, 2005, 15:05:40
Job time : 114 secs
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:48:06 ; Search time 121 Seconds
(without alignments)
549.775 Million cell updates/sec

Title: US-10-719-472-3

Perfect score: 907

Sequence: 1 CYLSRLMLDARENKLLDR.....TVSTTQKRLTRMGDLNSP 172

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_16Dec04:*
1: Geneseq1980s:*
2: Geneseq1990s:*
3: Geneseq2000s:*
4: Geneseq2001s:*
5: Geneseq2002s:*
6: Geneseq2003as:*
7: Geneseq2003bs:*
8: Geneseq2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	907	100.0	172	5	Abb07589 Recombina
2	907	100.0	172	8	Adm79178 Mature ov
3	907	100.0	172	8	Adsl3614 Recombina
4	901	99.3	195	2	Aar24941 Sequence
5	901	99.3	195	2	Aar24945 Sequence
6	899	99.1	172	2	Aar54768 Sheep int
7	899	99.1	172	2	Aar99397 Ovine tau
8	899	99.1	172	2	Aaw31698 Mature ov
9	899	99.1	172	2	Aaw44110 Mature ov
10	899	99.1	172	5	Abb07588 Ovine int
11	899	99.1	172	7	Adil7857 Mature ov
12	899	99.1	172	8	Adm79177 Mature ov
13	899	99.1	172	8	Adsl3613 Sheep int
14	899	99.1	195	2	Aar04540 Ovine tro
15	898	99.0	195	2	Aar24944 Sequence
16	897	98.9	172	2	Aar09294 Ovine tro
17	897	98.9	172	8	Aar79195 Interfero
18	896	98.8	195	2	Aar24942 Sequence
19	894	98.6	172	4	Aab31466 An ovine
20	892	98.3	172	4	Aab31457 Amino aci
21	892	98.3	172	5	Aao21461 Ovine int
22	890	98.1	172	4	Aab31462 An ovine
23	889	98.0	172	4	Aab31467 An ovine
24	888	97.9	172	4	Aab31468 An ovine
25	888	97.9	172	4	Aab31464 An ovine

26	887	97.8	172	4	AAB31459	An ovine
27	887	97.8	195	1	AAP91396	Isoform o
28	886	97.7	172	4	AAB31465	An ovine
29	886	97.7	172	4	AAB31460	An ovine
30	884	97.5	172	4	AAB31461	An ovine
31	882	97.2	172	4	AAB31463	An ovine
32	882	97.2	195	2	AAR24943	Sequence
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34	861.5	95.0	196	7	ADF94976	Sheep IFN
35	778	85.8	152	8	ADS16363	Human int
36	727	80.2	195	4	AAB49783	Bovine TP
37	727	80.2	195	5	AB808641	Bovine in
38	727	80.2	195	7	ADF94975	Bovine IF
39	724	79.8	195	2	AAR04539	CDNA clon
40	699	77.1	173	2	AAW70809	A tau mod
41	653	72.0	171	7	ADG42697	Human int
42	653	72.0	171	7	ADJ55766	Peptide.h
43	653	72.0	171	8	ADM76604	Human NOV
44	648	71.4	173	2	AAW70808	A tau mod
45	633	69.8	173	2	AAW56435	Amino aci

ALIGNMENTS

RESULT 1

ABB07589
ID ABB07589 standard; protein; 172 AA.
XX
AC ABB07589;
XX
DT 08-MAY-2002 (first entry)
XX
DE Recombinant ovine interferon-tau protein.
XX
KW Hepatitis C virus; HCV infection; ovine; interferon-tau; ovIFN-tau; OAS;
2',5'-oligoadenylate synthetase; virucide; hepatotropic; IFN-tau.
XX
OS Ovis aries.
XX
PN WO200206343-A2.
XX
PD 24-JAN-2002.
XX
PF 19-JUL-2001; 2001WO-US022976.
XX
PR 19-JUL-2000; 2000US-0219128P.
17-OCT-2000; 2000JP-00317160.
(PEPG-) PEPGEN CORP.
Sokawa Y, Liu C;
WPI; 2002-179784/23.
N-PSDB; ABA94937.
Oral-delivery composition for treating conditions relating to hepatitis caused by hepatitis C virus, comprises ovine interferon-tau which stimulates bloodstream levels of 2',5'-oligoadenylate synthetase.
Example 1; Page 33; 33pp; English.
The invention provides an oral-delivery composition for use in treating hepatitis C virus (HCV) in a HCV-infected patient. The composition comprises ovine interferon-tau (ovIFN-tau), in a dosage effective to stimulate bloodstream levels of 2',5'-oligoadenylate synthetase (OAS). The ovIFN-tau synthesizes OAS which degrades viral mRNA. A method is also provided for monitoring the treatment of HCV by oral administration of ovIFN-tau, by measuring the blood levels of OAS prior to and after such oral administration, and if necessary, adjusting the dose of IFN-tau until a measurable increase in blood OAS level, relative to the level observed prior to administration. The composition is useful for treating hepatitis caused by HCV and the method is useful for monitoring treatment

CC of HCV by oral administration of ovIFN-tau. The present sequence
CC represents a recombinant ovine interferon-tau protein
XX Sequence 172 AA;

Query Match 100.0%; Score 907; DB 5; Length 172;
Best Local Similarity 100.0%; Pred. No. 6.6e-92;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CYLSERLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLKQDAFFVLYEM 60
DB 1 CYLSERLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLKQDAFFVLYEM 60
QY 61 LQOSFNLFYTEHSSAANDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDESELGNMDPIVTV 120
DB 61 LQOSFNLFYTEHSSAANDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDESELGNMDPIVTV 120
QY 121 KKYFGQIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDLNSP 172
DB 121 KKYFGQIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDLNSP 172

RESULT 2
ADM79178
ID ADM79178 standard; protein; 172 AA.
AC ADM79178;
XX

DT 15-JUL-2004 (first entry)

DE Mature ovine interferon tau variant protein SEQ ID NO:2.

DE oral administration; interferon; IFN; ovine; mature interferon tau;
KW variant.
XX

XX Ovis aries.

OS Synthetic.

XX WO2004032863-A2.

XX 22-APR-2004.

XX 08-OCT-2003; 2003WO-US031999.

XX 09-OCT-2002; 2002US-0417292P.

XX (PEPG-) PEPGEN CORP.

XX Manning MC, Nayar R;

XX WPI; 2004-340799/31.

XX A composition for oral administration of an interferon (IFN) comprises an
PT IFN and a species that stabilizes the IFN in an active form by
PT interaction between the interferon and the species.

PS Example; SEQ ID NO 2; 52pp; English.

XX The present invention describes a composition for the oral administration
CC of an interferon (IFN) comprising an IFN and a species that stabilises
CC the IFN in an active form by interaction between the IFN and the species.
CC Also described: (1) preparing a protein for oral administration,
CC comprising formulating the protein with a species that stabilises the
CC protein in an active form by binding interaction between the protein and
CC the species, therefore the formulating results in a composition for oral
CC administration; and (2) selecting a dosage form composition for a protein
CC that achieves protein stabilisation for biological activity upon in vivo
CC administration, comprising selecting a protein for formulation, preparing
CC solutions of the selected protein or polypeptide in different buffers at
CC different pH values, and measuring the effect of the buffer on the
CC protein's tertiary structure, where the measuring identifies buffers that
CC result retention of the protein's tertiary structure. The composition and
CC methods are useful for preparing oral dosage forms for administration of

CC proteins and polypeptides. The present sequence represents a mature ovine
CC interferon tau variant amino acid sequence where positions 5 and 6 have
CC been modified, which is used in an example from the present invention.
XX Sequence 172 AA;

Query Match 100.0%; Score 907; DB 8; Length 172;
Best Local Similarity 100.0%; Pred. No. 6.6e-92;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CYLSERLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLKQDAFFVLYEM 60
DB 1 CYLSERLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLKQDAFFVLYEM 60
QY 61 LQOSFNLFYTEHSSAANDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDESELGNMDPIVTV 120
DB 61 LQOSFNLFYTEHSSAANDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDESELGNMDPIVTV 120
QY 121 KKYFGQIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDLNSP 172
DB 121 KKYFGQIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDLNSP 172

RESULT 3
ADS13614
ID ADS13614 standard; protein; 172 AA.
XX
AC ADS13614;
XX

DT 16-DEC-2004 (first entry)

DE Recombinant sheep interferon tau seqid 3.

DE immunosuppressive; cytostatic; virucide; neuroprotective; antidiabetic;
KW muscular; antiinflammatory; antirheumatic; antiarthritic; antiasthmatic;
KW dermatological; vaccine; interferon tau; 2',5'-oligoadenylate synthetase;
KW OAS; autoimmune condition; cancer; viral infection; multiple sclerosis;
KW hepatitis C infection; diabetes mellitus; systemic lupus erythematosus;
KW amyotrophic lateral sclerosis; Crohn's disease; rheumatoid arthritis;
KW asthma; uveitis; psoriasis; hypersensitivity disorder; sheep.

OS Ovis aries.

OS Synthetic.

XX Key Location/Qualifiers

FT Misc-difference 5 /note= "Wild type Arg substituted by Glu"

FT Misc-difference 6 /note= "Wild type Lys substituted by Arg"

XX US2004191217-A1.

XX 30-SEP-2004.

XX 21-NOV-2003; 2003US-00719472.

XX 19-JUL-2000; 2000US-0219128P.

XX 19-JUL-2001; 2001US-00910406.

XX 16-JAN-2002; 2002US-0349658P.

XX 16-JAN-2003; 2003US-00346269.

XX 31-OCT-2003; 2003US-00698927.

XX (SOKA/) SOKAWA Y.

XX (LIUC/) LIU C.

XX Sokawa Y, Liu C;

XX WPI; 2004-698654/68.

XX N-PSDB; ADS13615.

PT Treating a condition in a subject, e.g. autoimmune condition, cancer or
PT viral infection, comprises orally administering interferon-tau to the
PT intestinal tract to increase the blood 2',5'-oligoadenylate synthetase

PT level.

XX Claim 2; SEQ ID NO 3; 38pp; English.

XX The invention describes a method of treating a condition in a human
 CC subject responsive to interferon tau therapy comprises orally
 CC administering interferon-tau to the intestinal tract of the subject to
 CC produce an initial measurable increase in the subject's blood 2',5'-
 CC oligoadenylate synthetase (OAS) level, relative to the blood OAS level in
 CC the subject in the absence of interferon-tau administration. The method
 CC is useful for treating an autoimmune condition, cancer, or a viral
 CC infection. The method is particularly useful for treating multiple
 CC sclerosis or hepatitis C infection, diabetes mellitus, systemic lupus
 CC erythematosus, amyotrophic lateral sclerosis, Crohn's disease, rheumatoid
 CC arthritis, asthma, uveitis, psoriasis, and hypersensitivity disorders.
 CC This is the amino acid sequence of recombinant ovine interferon-tau in
 CC which the residues at positions 5 and 6 have been altered to Glu and Arg
 CC relative to the wild type Arg and Lys.

XX Sequence 172 AA;

Query Match 100.0%; Score 907; DB 8; Length 172;

Best Local Similarity 100.0%; Pred. No. 6.6e-92; Mismatches 0; Indels 0; Gaps 0;

Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSERLMLDARENKLLDRMNRSLSPHSCLQDRKDFGLPQEMVEGDQLQKQDQAPFVLYEM 60

DB 1 CYLSERLMLDARENKLLDRMNRSLSPHSCLQDRKDFGLPQEMVEGDQLQKQDQAPFVLYEM 60

QY 61 LQOSFNLFTYTHSSAAMDITLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMDFIVTV 120

DB 61 LQOSFNLFTYTHSSAAMDITLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMDFIVTV 120

QY 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172

DB 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172

QY 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172

DB 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172

RESULT 4

AAR24941

ID AAR24941 standard; protein; 195 AA.

XX AAR24941;

XX 25-MAR-2003 (revised)

DT 03-JAN-1992 (first entry)

XX Sequence of ovine trophoblastin.

XX Antiviral; antiinflammatory; antitumour; immunomodulator; immunogen;

KW trophoblastin; antiluteolytic agent.

XX Ammotragus lervia.

OS Key Location/Qualifiers

FH Peptide 1..23

FT /label= signal

XX WO9209691-A1.

XX 11-JUN-1992.

XX 29-NOV-1991; 91WO-FR000953.

XX 29-NOV-1990; 90FR-00014945.

XX 29-NOV-1990; 90FR-00014946.

XX (INRG) INRA INST NAT RECH AGRONOMIQUE.

XX Martal J, Degryse E, Gaye P, Charlier M, Charpigny G, Reinaud P;

XX Chaouat G;

XX WPI; 1992-217070/26.

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XX New type I interferon variants with added N-terminal di:peptide - include
 PT expression cassettes providing high yield in yeast, esp. trophoblast
 PT derivs. with e.g. anti-luteolytic activity.

XX Disclosure; Fig 1; 53pp; French.

XX The DNA sequence encoding the precursor of ovine trophoblastin was
 CC disclosed in PCT WO 89/08706 (see AAR24941). AAR24942-R24945 are isoforms
 CC of trophoblastin. They have anti-luteolytic activity and are used to
 CC improve survival of transplanted embryos; as a reagent for detecting
 CC viability of embryos at an early stage of its development; and to improve
 CC the fertility of livestock. (Updated on 25-MAR-2003 to correct PN field.)
 XX Sequence 195 AA;

Query Match 99.3%; Score 901; DB 2; Length 195;
 Best Local Similarity 98.8%; Pred. No. 3.6e-91; Mismatches 0; Indels 0; Gaps 0;

Matches 170; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSERLMLDARENKLLDRMNRSLSPHSCLQDRKDFGLPQEMVEGDQLQKQDQAPFVLYEM 60

DB 24 CYLSERLMLDARENKLLDRMNRSLSPHSCLQDRKDFGLPQEMVEGDQLQKQDQAPFVLYEM 83

QY 61 LQOSFNLFTYTHSSAAMDITLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMDFIVTV 120

DB 84 LQOSFNLFTYTHSSAAMDITLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMDFIVTV 143

QY 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172

DB 144 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 195

RESULT 5

AAR24945

ID AAR24945 standard; protein; 195 AA.

XX AAR24945;

XX 25-MAR-2003 (revised)

DT 03-JAN-1992 (first entry)

XX Sequence of ovine trophoblastin variant Xd.

XX Antiviral; antiinflammatory; antitumour; immunomodulator; immunogen;

KW trophoblastin; antiluteolytic agent.

XX Ammotragus lervia.

OS Key Location/Qualifiers

FH Peptide 1..23

FT /label= signal

XX WO9209691-A1.

XX 11-JUN-1992.

XX 29-NOV-1991; 91WO-FR000953.

XX 29-NOV-1990; 90FR-00014945.

XX 29-NOV-1990; 90FR-00014946.

XX (INRG) INRA INST NAT RECH AGRONOMIQUE.

XX Martal J, Degryse E, Gaye P, Charlier M, Charpigny G, Reinaud P;

XX Chaouat G;

XX WPI; 1992-217070/26.

XX New type I interferon variants with added N-terminal di:peptide - include

PT expression cassettes providing high yield in yeast, esp. trophoblast

PT derivs. with e.g. anti-luteolytic activity.

XX

PS Claim 7; Page 30; 53pp; French.

XX The DNA sequence encoding the precursor of ovine trophoblastin was disclosed in PCT WO 89/08706 (see AAR24941). AAR24942-R24945 are isoforms of trophoblastin. They have anti-luteolytic activity and are used to improve survival of transplanted embryos; as a reagent for detecting viability of embryos at an early stage of its development; and to improve the fertility of livestock. (Updated on 25-MAR-2003 to correct PN field.)

XX Sequence 195 AA;

Query Match 99.3%; Score 901; DB 2; Length 195;
Best Local Similarity 98.8%; Pred. No. 3.6e-91;
Matches 170; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CYLSERLMLDARENKLLDRNMRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
Db 24 CYLSQRLMLDARENKLLDRNMRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 83
Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNGEEDSELGNMDDPIVTV 120
Db 84 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNGEEDSELGNMDDPIVTV 143
Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
Db 144 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 195

RESULT 6

AAR54768
ID AAR54768 standard; protein; 172 AA.

XX AAR54768;

AC AAR54768;

XX 25-MAR-2003 (revised)

DT 01-DEC-1994 (first entry)

XX Sheep interferon-tau mature protein.

XX Sheep; interferon-tau; immunostimulant; antitumor; virucide.

XX Ovis aries.

XX WO9410313-A2.

XX 11-MAY-1994.

XX 19-OCT-1993; 93WO-US010016.

XX 30-OCT-1992; 92US-00969890.

XX (UYFL) UNIV FLORIDA.

PA (WOME-) WOMEN'S RES INST.

XX Bazer FW, Johnson HM, Pontzer CH, Ott TL, Van Heeke G, Imakawa K;

XX WPI; 1994-167468/20.

DR N-PSDB; AAQ64824.

XX Interferon tau compns - lacking cytotoxic side effects when used as antivirals, and anti-cellular proliferation agents.

XX Claim 3; Page 90; 126pp; English.

XX This sheep IFN-tau protein is expressed in yeast, insect cells or E. coli using expression vector phage lambda-gt11. The protein is useful for inhibit tumor cell growth, for inhibiting viral replication in cells and enhancing fertility in female mammals. (Updated on 25-MAR-2003 to correct PN field.)

XX Sequence 172 AA;

Query Match 99.1%; Score 899; DB 2; Length 172;

Best Local Similarity 98.8%; Pred. No. 5.1e-91;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 CYLSERLMLDARENKLLDRNMRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

Db 1 CYLSRKLMLDARENKLLDRNMRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNGEEDSELGNMDDPIVTV 120

Db 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNGEEDSELGNMDDPIVTV 120

Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172

Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172

RESULT 7

AAR99397

ID AAR99397 standard; protein; 172 AA.

XX AAR99397;

AC AAR99397;

XX 29-DEC-1996 (first entry)

DT 29-DEC-1996 (first entry)

XX Ovine tau interferon (synthetic).

XX Tau interferon; ovine; bovine; autoimmune disease;

KW proliferative disorder; viral disease; fertility.

XX Synthetic.

OS Synthetic.

XX WO9628183-A1.

PN 19-SEP-1996.

XX 15-MAR-1996; 96WO-US003472.

XX 16-MAR-1995; 95US-00406190.

XX (UYFL) UNIV FLORIDA.

XX Soos JW, Schiftenbauer J, Johnson HM;

PI WPI; 1996-464609/46.

XX N-PSDB; AAT41504.

XX Tau interferon-contg. medicament - useful to treat auto-immune diseases,

PT proliferative disorders, viral diseases or to enhance fertility in a

PT female mammal.

XX Claim 5; Page 48; 65pp; English.

XX Ovine and human tau interferon may be used in medicaments to treat

CC autoimmune disorders (e.g. multiple sclerosis or rheumatoid arthritis), a

CC proliferative disorder (e.g. cancer) or a viral disease (e.g. hepatitis

CC B). It can also be used to enhance fertility in female mammals. The

CC medicament is given orally or by injection. Ovine and human tau

CC interferon sequences are given in AAT41504 to AAT41506

XX Sequence 172 AA;

Query Match 99.1%; Score 899; DB 2; Length 172;

Best Local Similarity 98.8%; Pred. No. 5.1e-91;

Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 CYLSERLMLDARENKLLDRNMRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

Db 1 CYLSRKLMLDARENKLLDRNMRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNGEEDSELGNMDDPIVTV 120

Db 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNGEEDSELGNMDDPIVTV 120

Qy	1	CYLSERLMLDARENLKLLDRNMRLSPHSCLOQRKDQGLPQEMVEGQQCKDKQAFFVLVEM	60
		:	
Dd	1	CYLSRKLMLDARENLKLLDRNMRLSPHSCLOQRKDQGLPQEMVEGQQCKDKQAFFVLVEM	60
Qy	61	LQGSFNLFTYTHSSAAWDTTLLEQLCTGLQQQLDLHLCRCGVGMGEEDSELGNNDPIVTV	120

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Db      61  LQOSENLFYTESSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMEEDSELGNMDPIVTV 120
      |||
Qy      121  KKYFGQIDYLOEKGYSDCAWEIVRVEMMRALTSTTTLOKRLTKMGGLNSP 172
      |||
Db      121  KKYFGQIDYLOEKGYSDCAWEIVRVEMMRALTSTTTLOKRLTKMGGLNSP 172
      |||

RESULT 10
AB07588
ID  ABB07588 standard; protein; 172 AA.
XX  AC  ABB07588;
XX  DT  08-MAY-2002 (first entry)
XX  DE  Ovine interferon-tau protein.
XX  KW  Hepatitis C virus; HCV infection; ovine; interferon-tau; ovIFN-tau; OAS;
KW  2',5'-oligoadenylate synthetase; virucide; hepatotropic; IFN-tau.
XX  OS  Ovis aries.
XX  PN  WO200206343-A2.
XX  PD  24-JAN-2002.
XX  PF  19-JUL-2001; 2001WO-US022976.
XX  PR  19-JUL-2000; 2000US-0219128P.
XX  PR  17-OCT-2000; 2000JP-00317160.
XX  PA  (PEPG-) PEPGEN CORP.
XX  PI  Sokawa Y, Liu C;
XX  WPI; 2002-179784/23.
XX  N-PSDB; ABA94936.

Oral-delivery composition for treating conditions relating to hepatitis
caused by hepatitis C virus, comprises ovine interferon-tau which
stimulates bloodstream levels of 2',5'-oligoadenylate synthetase.

Example 1; Page 32-33; 33pp; English.

The invention provides an oral-delivery composition for use in treating
hepatitis C virus (HCV) in a HCV-infected patient. The composition
comprises ovine interferon-tau (ovIFN-tau), in a dosage effective to
stimulate bloodstream levels of 2',5'-oligoadenylate synthetase (OAS).
The ovIFN-tau synthesizes OAS which degrades viral mRNA. A method is also
provided for monitoring the treatment of HCV by oral administration of
ovIFN-tau, by measuring the blood levels of OAS prior to and after such
oral administration, and if necessary, adjusting the dose of IFN-tau
until a measurable increase in blood OAS level, relative to the level
observed prior to administration. The composition is useful for treating
hepatitis caused by HCV and the method is useful for monitoring treatment
of HCV by oral administration of ovIFN-tau. The present sequence
represents an ovine interferon-tau protein

Sequence 172 AA;
Query Match          99.1%; Score 899; DB 5; Length 172;
Best Local Similarity 98.8%; Pred. No. 5.1e-91;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy      1  CYLSRLMLDARENKLLDRNRLSPHSCLOQRKDFGLPQEKVEGDQLQDQAPPLVYEM 60
      |||
Db      1  CYLSRLMLDARENKLLDRNRLSPHSCLOQRKDFGLPQEKVEGDQLQDQAPPLVYEM 60
      |||

Qy      61  LQOSENLFYTESSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMEEDSELGNMDPIVTV 120
      |||
Db      61  LQOSENLFYTESSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMEEDSELGNMDPIVTV 120
      |||

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Qy      121  KKYFGQIDYLOEKGYSDCAWEIVRVEMMRALTSTTTLOKRLTKMGGLNSP 172
      |||
Db      121  KKYFGQIDYLOEKGYSDCAWEIVRVEMMRALTSTTTLOKRLTKMGGLNSP 172
      |||

RESULT 11
ADI17857
ID  ADI17857 standard; protein; 172 AA.
XX  AC  ADI17857;
XX  DT  22-APR-2004 (first entry)
XX  DE  Mature ovine interferon-tau, SEQ ID NO:2.
XX  KW  Interferon-tau; oral dosage form; oral administration; fasted state;
KW  2',5'-oligoadenylate synthetase; OAS; autoimmune condition;
KW  multiple sclerosis; diabetes mellitus; Hashimoto's thyroiditis;
KW  rheumatoid arthritis; uveitis; psoriasis; systemic lupus erythematosus;
KW  allergy; asthma; eczema; Crohn's disease; ulcerative colitis;
KW  viral infection; HIV infection; hepatitis;
KW  cellular proliferation disorder; multiple myeloma; ovarian cancer;
KW  hairy cell leukaemia; inflammatory disease; immunosuppressive; virucide;
KW  cytostatic; antiinflammatory; neuroprotective; antidiabetic;
KW  thymimetic; antirheumatic; antiarthritic; ophthalmological;
KW  antipsoriatic; dermatological; antiallergic; antiasthmatic; antiulcer;
KW  anti-HIV; hepatotropic; vaccine; ovine; sheep.
XX  OS  Ovis aries.
XX  OS  Synthetic.
XX  PN  WO2003061728-A2.
XX  PD  31-JUL-2003.
XX  PF  16-JAN-2003; 2003WO-US001596.
XX  PR  16-JAN-2002; 2002US-0349658P.
XX  PA  (PEPG-) PEPGEN CORP.
XX  PI  Sokawa Y, Liu C;
XX  WPI; 2003-598711/56.
XX  N-PSDB; ADI17856.

An oral dosage form of interferon-tau administered to a subject in a
fasted state to achieve an increased level of 2',5'-oligoadenylate
synthetase, useful for treating a condition responsive to interferon-tau,
e.g. viral infection.

Claim 3; SEQ ID NO 2; 28pp; English.

The invention relates to a composition for use in treating a condition
responsive to interferon-tau, comprising an oral dosage form of interferon
-tau. The composition is administered to a patient in a fasted state to
increase the level of 2',5'-oligoadenylate synthetase (OAS) in the blood
relative to that obtained after administration of interferon-tau to a fed
patient. The interferon-tau used in the composition is preferably ovine
or bovine. The composition is useful in the treatment of autoimmune
conditions (e.g., multiple sclerosis, diabetes mellitus, Hashimoto's
thyroiditis, rheumatoid arthritis, uveitis, psoriasis, systemic lupus
erythematosus, allergies, asthma, eczema, Crohn's disease or ulcerative
colitis), viral infections (e.g., HIV infection or hepatitis), disorders
associated with cellular proliferation (e.g., multiple myeloma, ovarian
cancer or hairy cell leukaemia), or inflammatory diseases. The present
sequence represents mature ovine interferon-tau.

Sequence 172 AA;
Query Match          99.1%; Score 899; DB 7; Length 172;
Best Local Similarity 98.8%; Pred. No. 5.1e-91;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

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Qy	1	CYLSERLMLDARENIKLLDRNRLSPHSCLODRKDFGLPOEMVEGDQLQKQQAFFVLYEM	60
		:	
Db	1	CYLSERLMLDARENIKLLDRNRLSPHSCLODRKDFGLPOEMVEGDQLQKQQAFFVLYEM	60
Qy	61	LQGSFNLFFYTHSSAAWDTTLLLEQCTGLQQLQDLHDTCRGVNGEEDSELGNMDDIVTV	120
Db	61	LQGSFNLFFYTHSSAAWDTTLLLEQCTGLQQLQDLHDTCRGVNGEEDSELGNMDDIVTV	120
Qy	121	KKYFGIGIDYDYLQEKGYSCAMEIVRVENMRALTVTSTTLQKRLTKMGDGLNSP	172
Db	121	KKYFGIGIDYDYLQEKGYSCAMEIVRVENMRALTVTSTTLQKRLTKMGDGLNSP	172

RESULT 12	
ADM79177	
ID	ADM79177 standard; protein; 172 AA.
XX	
AC	ADM79177;
XX	
DT	15-JUL-2004 (first entry)
XX	
DE	Mature ovine interferon tau protein SEQ ID NO:1.
XX	
KW	oral administration; interferon; IFN; ovine; mature interferon tau.
XX	
OS	Ovis aries..
XX	
PN	WO2004032863-A2.
XX	
PD	22-APR-2004.
XX	
PF	08-OCT-2003; 2003WO-US031999.
XX	
PR	09-OCT-2002; 2002US-0417292P.
XX	
PA	(PEPG-) PERGEN CORP.
XX	
PI	Manning MC, Nayar R;
XX	
DR	WPI; 2004-340799/31.
XX	
XX	
PT	A composition for oral administration of an interferon (IFN) comprises an
PT	IFN and a species that stabilizes the IFN in an active form by
PT	interaction between the interferon and the species.
XX	
PS	Example; SEQ ID NO 1; 52pp; English.

The present invention describes a composition for the oral administration of an interferon (IFN) comprising an IFN and a species that stabilises the IFN in an active form by interaction between the IFN and the species. Also described: (1) preparing a protein for oral administration, comprising formulating the protein with a species that stabilises the protein in an active form by binding interaction between the protein and the species, therefore the formulating results in a composition for oral administration; and (2) selecting a dosage form composition for a protein that achieves protein stabilisation for biological activity upon *in vivo* administration, comprising selecting a protein for formulation, preparing solutions of the selected protein or polypeptide in different buffers at different pH values, and measuring the effect of the buffer on the protein's tertiary structure, where the measuring identifies buffers that result retention of the protein's tertiary structure. The composition and methods are useful for preparing oral dosage forms for administration of proteins and polypeptides. The present sequence represents the mature ovine interferon tau amino acid sequence, which is used in an example from the present invention.

SQ Sequence 172 AA;
 Query Match 99.1%; Score 899; DB 8; Length 172;
 Best Local Similarity 98.8%; Pred. No. 5.1e-91;
 Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy	1	CYLSERLMLDARENKLLDRNRNLSPHSCLODRKDFGLPOEMVEGGDLOKQDAFPVL	YEM 60
Db	1	CYLSRRLMLDARENKLLDRNRNLSPHSCLODRKDFGLPOEMVEGGDLOKQDAFPVL	YEM 60
Qy	61	LOQSNNLIFYTHSSAANDTTLLLEOCTGLQOQLDHLDTCRGVMGSEDSLGNNDP	PIVV 120
Db	61	LOQSNNLIFYTHSSAANDTTLLLEOCTGLQOQLDHLDTCRGVMGSEDSLGNNDP	PIVV 120
Qy	121	KYFGOGIYDYLQEGYSDCAMEIVRVEMNRALTVSTTLQRLRTKMGGDLSNP	172
Db	121	KYFGOGIYDYLQEGYSDCAMEIVRVEMNRALTVSTTLQRLRTKMGGDLSNP	172

RESULT 13	
ADS13613	
ID	ADS13613 standard; protein; 172 AA.
XX	
XX	
AC	ADS13613;
XX	
XX	
DT	16-DEC-2004 (first entry)
XX	
XX	
DE	Sheep interferon tau seqid 2.
XX	
KW	immunosuppressive; cytostatic; virucide; neuroprotective; antidiabetic;
KW	muscular; antiinflammatory; antirheumatic; antiarthritic; antiasthmatic;
KW	dermatological; vaccine; interferon tau; 2', 5'-oligoadenylate synthetase;
KW	OAS; autoimmune condition; cancer; viral infection; multiple sclerosis;
KW	hepatitis C infection; diabetes mellitus; systemic lupus erythematosus;
KW	amyotrophic lateral sclerosis; Crohn's disease; rheumatoid arthritis;
KW	asthma; uveitis; psoriasis; hypersensitivity disorder; sheep.

XX	Ovis aries.
XX	
XX	US2004191217-A1.
XX	
XX	30-SEP-2004.
PD	
XX	
XX	21-NOV-2003; 2003US-00719472.
XX	
XX	19-JUL-2000; 2000US-0219128P.
PR	19-JUL-2001; 2001US-00910406.
PR	16-JAN-2002; 2002US-0349658P.
PR	16-JAN-2003; 2003US-00346269.
PR	31-OCT-2003; 2003US-00698927.
XX	
XX	(SOKA/) SOKAWA Y.
PA	(LIUC/) LIU C.

XX	
PI	Sokawa Y, Liu C;
XX	
XX	WPI: 2004-698654/68.
DR	N-PSDB; ADS13612.
XX	
XX	Treating a condition in a subject, e.g. autoimmune condition, cancer or
PT	PT viral infection, comprises orally administering interferon-tau to the
PT	PT intestinal tract to increase the blood 2',5'-oligoadenylate synthetase
PT	PT level.
XX	
XX	Claim 2; SEQ ID NO 2; 38pp; English.
PS	
XX	
XX	The invention describes a method of treating a condition in a human
CC	CC subject responsive to interferon tau therapy comprises orally
CC	CC administering interferon-tau to the intestinal tract of the subject to
CC	CC produce an initial measurable increase in the subject's blood 2',5'-
CC	CC oligoadenylate synthetase (OAS) level, relative to the blood OAS level in
CC	CC the subject in the absence of interferon-tau administration. The method
CC	CC is useful for treating an autoimmune condition, cancer, or a viral
CC	CC infection. The method is particularly useful for treating multiple
CC	CC sclerosis or hepatitis C infection, diabetes mellitus, systemic lupus
CC	CC erythematosus, amyotrophic lateral sclerosis, Crohn's disease, rheumatoid
CC	CC arthritis, asthma, uveitis, psoriasis, and hypersensitivity disorders.
CC	CC This is the amino acid sequence of ovine interferon-tau.
XX	

```
SQ      Sequence 172 AA;
Query Match      99.1%; Score 899; DB 8; Length 172;
Best Local Similarity 98.8%; Pred. No. 5.1e-91;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY      1  CYLSRLMLDARENKLLDRNMRLSPHSCLODRKDFGLPQEMVEGDQLOKQDAFFVLVEM 60
DB      1  CYLSRLMLDARENKLLDRNMRLSPHSCLODRKDFGLPQEMVEGDQLOKQDAFFVLVEM 60

QY      61  LQOSFNLFFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
DB      61  LQOSFNLFFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120

QY      121  KYFQGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGGDLNSP 172
DB      121  KYFQGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGGDLNSP 172

RESULT 14
AAR04540
ID      AAR04540 standard; protein; 195 AA.
AC      AAR04540;
XX
DT      25-MAR-2003 (revised)
DT      17-SEP-1990 (first entry)
XX
DE      Ovine trophoblast protein-1 (otP-1).
XX
KW      Bovine trophoblast protein-1; bTP-1; fertility; ds.
XX
OS      Sus scrofa.
XX
PN      EP367063-A.
XX
PD      09-MAY-1990.
XX
PF      23-OCT-1989; 89EP-00119642.
XX
PR      26-OCT-1988; 88US-00262870.
XX
PA      (UMOR ) UNIV MISSOURI.
XX
PI      Roberts MR, Imakawa K;
XX
PS      WPI; 1990-141062/19.
DR      N-PSDB; AAQ04289.
XX
PT      Recombinant bovine trophoblast protein-1 - used for enhancing fertility
PT      or treating viral diseases in mammal, esp. cattle.
XX
PS      Disclosure; Page ?; 27pp; English.
XX
CC      The bTP-1 produced from the gene may be used to promote fertility or
CC      treat viral disease in cattle. The gene may also be used to provide
CC      transgenic animals with enhanced fertility, or in prophylactic and
CC      therapeutic treatment of other mammals. (Updated on 25-MAR-2003 to
CC      correct PA field.)
XX
SQ      Sequence 195 AA;

Query Match      99.1%; Score 899; DB 2; Length 195;
Best Local Similarity 98.8%; Pred. No. 6.1e-91;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY      1  CYLSRLMLDARENKLLDRNMRLSPHSCLODRKDFGLPQEMVEGDQLOKQDAFFVLVEM 60
DB      24  CYLSRLMLDARENKLLDRNMRLSPHSCLODRKDFGLPQEMVEGDQLOKQDAFFVLVEM 83

QY      61  LQOSFNLFFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
DB      84  LQOSFNLFFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 143

QY      121  KYFQGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGGDLNSP 172
DB      144  KYFQGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGGDLNSP 195

RESULT 15
AAR24944
ID      AAR24944 standard; protein; 195 AA.
XX
AC      AAR24944;
XX
DT      25-MAR-2003 (revised)
DT      03-JAN-1992 (first entry)
XX
DE      Sequence of ovine trophoblastin variant Xc.
XX
KW      Antiviral; antiinflammatory; antitumour; immunomodulator; immunogen;
KW      trophoblastin; antiluteolytic agent.
XX
OS      Ammotragus lervia.
XX
FH      Key      Location/Qualifiers
FT      Peptide 1..23
FT      FT      /label= signal
XX
PN      WO9209691-A1.
XX
PD      11-JUN-1992.
XX
PF      29-NOV-1991; 91WO-FR000953.
XX
PR      29-NOV-1990; 90FR-00014945.
PR      29-NOV-1990; 90FR-00014946.
XX
PA      (INRG ) INRA INST NAT RECH AGRONOMIQUE.
XX
PI      Martal J, Degryse E, Gaye P, Charlier M, Charpigny G, Reinaud P;
PI      Chacuat G;
XX
PS      WPI; 1992-217070/26.
XX
PT      New type I interferon variants with added N-terminal dipeptide - include
PT      expression cassettes providing high yield in yeast, esp. trophoblast
PT      derivs. with e.g. anti-luteolytic activity.
XX
PS      Claim 7; Page 30; 53pp; French.
XX
CC      The DNA sequence encoding the precursor of ovine trophoblastin was
CC      disclosed in PCT WO 89/08706 (see AAR24941). AAR24942-R24945 are isoforms
CC      of trophoblastin. They have anti-luteolytic activity and are used to
CC      improve survival of transplanted embryos; as a reagent for detecting
CC      viability of embryos at an early stage of its development; and to improve
CC      the fertility of livestock. (Updated on 25-MAR-2003 to correct PN field.)
XX
SQ      Sequence 195 AA;

Query Match      99.0%; Score 898; DB 2; Length 195;
Best Local Similarity 98.3%; Pred. No. 7.8e-91;
Matches 169; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY      1  CYLSRLMLDARENKLLDRNMRLSPHSCLODRKDFGLPQEMVEGDQLOKQDAFFVLVEM 60
DB      24  CYLSRLMLDARENKLLDRNMRLSPHSCLODRKDFGLPQEMVEGDQLOKQDAFFVLVEM 83

QY      61  LQOSFNLFFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
DB      84  LQOSFNLFFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 143

QY      121  KYFQGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGGDLNSP 172
DB      144  KYFQGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGGDLNSP 195
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Search completed: October 28, 2005, 14:56:02
Job time : 122 secs

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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:51:03 ; Search time 25 Seconds
(without alignments)
661.971 Million cell updates/sec

Title: US-10-719-472-3

Perfect score: 907

Sequence: 1 CYLSRLMLDARENKLLDR.....TVSTTLQKRLTKVGGDLNSP 172

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 79:.*
1: pir1:.*
2: pir2:.*
3: pir3:.*
4: pir4:.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	901	99.3	195	2 JS0204	trophoblast interf
2	878	96.8	195	2 I47068	trophoblast protei
3	872	96.1	195	2 I47066	trophoblast protei
4	869	95.8	195	2 I47069	trophoblast protei
5	844	93.1	195	2 I46272	trophoblast interf
6	839	92.5	172	2 A61578	trophoblast protei
7	834	92.0	195	2 A61455	trophoblast protei
8	810	89.3	195	2 I47067	trophoblast protei
9	782	86.2	195	2 I47097	trophoblast protei
10	749	82.6	184	2 I47098	trophoblast protei
11	729	80.4	195	2 A39505	trophoblast interf
12	727	80.2	195	2 S23751	trophoblast interf
13	724	79.8	195	2 A40068	trophoblast protei
14	724	79.8	195	2 B39505	trophoblast protei
15	610	67.3	195	2 A53746	interferon, tropho
16	609	67.1	195	2 A61403	interferon alpha-I
17	588	64.8	195	2 I47070	interferon omega -
18	586	64.6	195	2 I46397	interferon alpha -
19	583	64.3	195	1 IVB011	interferon alpha-I
20	514.5	56.7	190	2 S23711	interferon alpha-I
21	500	55.1	195	1 IVH022	interferon alpha-I
22	489.5	54.0	190	2 S23712	interferon alpha-I
23	489	53.9	110	2 B61578	trophoblast protei
24	474	52.3	195	1 IVHUI1	interferon omega-1
25	470.5	51.9	179	2 S23710	interferon alpha-I
26	455	50.2	189	2 I51970	interferon precurs
27	447	49.3	176	2 I56314	interferon-alpha -
28	443	48.8	195	1 IVH021	interferon alpha-I
29	441	48.6	189	1 IVHUI1	interferon alpha-I

RESULT 1

JS0204

trophoblast interferon alpha precursor - sheep

N:Alternate names: antiluteolysin; trophoblast antiluteolytic protein; trophoblastic prot

C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)

C>Date: 31-Mar-1990 #sequence revision 31-Mar-1990 #text change 09-Jul-2004

C:Accession: S03799; B61403; JS0204; A60947; A53867; S06321; S00306; A60957; A60936

R:Stewart, H.J.; Flint, A.P.F.; Lamming, G.E.; McCann, S.H.E.; Parkinson, T.J.

Submitted to the EMBL Data Library, June 1988

A:Reference number: S03799

A:Accession: S03799

A:Molecule type: DNA

A:Residues: 1-195 <STE>

A:Cross-references: UNIPROT:P56828; UNIPROT:P56829; EMBL:X07920; NID:gl821; PIDN:CAA3075;

R:Charlier, M.; Hue, D.; Boissard, M.; Martal, J.; Gaye, P.

Mol. Cell. Endocrinol. 76, 161-171, 1991

A:Title: Cloning and structural analysis of two distinct families of ovine interferon-alf

A:Reference number: A61403; MUID:92324492; PMID:1820971

A:Accession: B61403

A>Status: not compared with conceptual translation

A:Molecule type: DNA

A:Residues: 1-129,'K',131-195 <CHA>

R:Charlier, M.; Hue, D.; Martal, J.; Gaye, P.

Gene 77, 341-348, 1989

A:Title: Cloning and expression of cDNA encoding ovine trophoblastin: its identity with e

A:Reference number: JS0204; MUID:89326151; PMID:2753362

A:Accession: JS0204

A:Molecule type: mRNA

A:Residues: 1-195 <CHM>

A:Cross-references: GB:M26386; NID:g530199; PIDN:AAA31584.1; PID:g530200

A:Experimental source: embryo

R:Stewart, H.J.; McCann, S.H.E.; Northrop, A.J.; Lamming, G.E.; Flint, A.P.F.

J. Mol. Endocrinol. 2, 65-70, 1989

A:Title: Sheep antiluteolytic interferon: cDNA sequence and analysis of mRNA levels.

A:Reference number: A60947; MUID:89351557; PMID:2475129

A:Accession: A60947

A:Molecule type: mRNA

A:Residues: 1-195 <ST3>

R:Stewart, H.J.; Flint, A.P.F.; Lamming, G.E.; McCann, S.H.E.; Parkinson, T.J.

J. Reprod. Fertil. Suppl. 37, 127-138, 1989

A:Title: Antiluteolytic effects of blastocyst-secreted interferon investigated in vitro e

A:Reference number: A53867; MUID:90040431; PMID:2530342

A:Accession: A53867

A:Molecule type: mRNA

A:Residues: 1-195 <ST4>

R:Imakawa, K.; Anthony, R.V.; Kazemi, M.; Marrotti, K.R.; Polites, H.G.; Roberts, R.M.

Nature 330, 377-379, 1987

A:Title: Interferon-like sequence of ovine trophoblast protein secreted by embryonic trof

A:Reference number: S06221; MUID:88065855; PMID:2446135

A:Accession: S06221

A:Molecule type: mRNA

A:Residues: 1-27,'RK',30-105,'E',107-195 <IMA>

Db	24	CYLSQRMLDARENLRLDLLDRNRLSPHSCIQDRKDFGLPQEMVEGDQLQDQAPFVLYEM	83
Qy	61	LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPVTV	120
Db	84	LQOSFNLFYTEHSSAAWDTTLDDQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPVTV	143
Qy	121	KYFQGIYDYLQKGYSDCAWEIVRVEMRALTVSTTLQKRLTKMGGLNSP	172
Db	144	KYFQGIYDYLQKGYSDCAWEIVRVEMRALTSSTTLQKRLTKMGGLNSP	195
RESULT 5			
I46272			
trophoblast interferon - goat			
C:Species: Capra aegagrus hircus (domestic goat)			
C:Date: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 09-Jul-2004			
C:Accession: I46272			
R;Leaman, D.W.; Roberts, R.M.			
J. Interferon Res. 12, 1-11, 1992			
A;Title: Genes for the trophoblast interferons in sheep, goat, and musk ox and distributed			
A;Reference number: I46272; MUID:92242937; PMID:1374107			
A;Accession: I46272			
A;Status: preliminary; translated from GB/EMBL/DBJ			
A;Molecule type: DNA			
A;Residues: 1-195 <JE4>			
A;Cross-references: UNIPROT:P28171; GB:M73243; NID:g1641116; PIDN:AAA30907.1; PID:g1641117			
C;Genetics:			
A;Gene: cfp-1			
C;Superfamily: interferon alpha			
Query Match 93.1%; Score 844; DB 2; Length 195;			
Best Local Similarity 93.6%; Pred. No. 8.3e-70;			
Matches 161; Conservative 3; Mismatches 8; Indels 0; Gaps 0;			
Qy	1	CYLSERMLDARENLKLLDRNRLSPHSCIQDRKDFGLPQEMVEGDQLQDQAPFVLYEM	60
Db	24	CYLSRRLMLDARENLRLDLLDRNRLSPHSCQQDRKDFGLPQEMVEGDQLQDQASCVLVEM	83
Qy	61	LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPVTV	120
Db	84	LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPVTV	143
Qy	121	KYFQGIYDYLQKGYSDCAWEIVRVEMRALTVSTTLQKRLTKMGGLNSP	172
Db	144	KYFQGIYDYLQKGYSDCAWEIVRVEMRALTASTTLQKRLTKMGGLNSP	195
RESULT 6			
A61578			
trophoblast protein 1 (clone SPW49) - sheep (fragment)			
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)			
C:Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 17-Mar-1999			
C:Accession: A61578			
R;Watkins, S.P.; Jeacock, M.K.; Savva, D.; Shepherd, D.A.L.			
Int. J. Biochem. 23, 1013-1018, 1991			
A;Title: Ovine trophoblast protein-one: evidence for possible glycosylation.			
A;Reference number: A61578; MUID:92155417; PMID:1786844			
A;Accession: A61578			
A;Molecule type: mRNA			
A;Residues: 1-172 <WAT>			
C;Superfamily: interferon alpha			
C;Keywords: glycoprotein; pregnancy maintenance			
F;78/Binding site: carbohydrate (Asn) (covalent) #status predicted			
Query Match 92.5%; Score 839; DB 2; Length 172;			
Best Local Similarity 91.9%; Pred. No. 2e-69;			
Matches 158; Conservative 8; Mismatches 6; Indels 0; Gaps 0;			
Qy	1	CYLSERMLDARENLKLLDRNRLSPHSCIQDRKDFGLPQEMVEGDQLQDQAPFVLYEM	60
Db	1	CYLSRKLMLDARENLRLDLLDRNRLSPHSCIQDRKDFGLPQEMVEGDQLQDQAFSVLYEM	60

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Qy 61 LQGSFNLFYTEHSSAANDTTLLLEQLCTGLQOOLDHLDTCRGOVMGEEDSELGNMDPIVTY 120
Db 61 LQGSFNVFHTSHSSAANNWTTLLLEQLCTGLQOOLDHLDTCKGFPVMGSKDSELGKMDPIVTY 120

Qy 121 KKYFQGIYDYLQEGKSGDCAWEIVRVENMRALTSTTTLQKRLTKMGDLNSP 172
Db 121 KKYFQGIHDIYLOEGKSGDCAWEIVRVENMRALTSTTTLQKRLTKMGDLKSP 172

RESULT 7
A61455
trophoblast protein 1 precursor - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1994 #sequence_revision 15-Oct-1994 #text_change 09-Jul-2004
C:Accession: A61455; S12624
R:Roberts, R.M.; Cross, J.C.; Farin, C.E.; Hansen, T.R.; Klemann, S.W.; Imakawa, K.
J. Reprod. Fertil. Suppl. 41, 63-74, 1990
A:Title: Interferons at the placental interface.
A:Reference number: A61455; MUID:91012357; PMID:2213717
A:Accession: A61455
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-195 <ROB>
A:CROSS-references: UNIPROT:Q29429
R:Klemann, S.W.; Imakawa, K.; Roberts, R.M.
Nucleic Acids Res. 18, 6724-1990
A:Title: Sequence variability among ovine trophoblast interferon cDNA.
A:Reference number: S12624; MUID:91067497; PMID:1701245
A:Accession: S12624
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-195 <KLE>
A:CROSS-references: EMBL:X56343; NID:g1155013; PIDN:CAA39783.1; PID:g1155014
A:Experimental source: clone oTP-1 p6
C:Superfamily: interferon alpha
F:1-23/Domain: signal sequence #status predicted <SIG>
F:24-195/Product: trophoblast protein 1 #status predicted <MAT>

Query Match 92.0%; Score 834; DB 2; Length 195;
Best Local Similarity 91.9%; Pred No. 6.8e-69;
Matches 158; Conservative 7; Mismatches 7; Indels 0; Gaps 0;

Qy 1 CYLSERLMLDARENLLKLLDRMNLSPHSCLODRKDFGLPQEMVEGDQLQDQAFVLYEM 60
Db 24 CYLSRKLMLDARENLLKLLDRMNLSPHSCLODRKDFGLPQEMVEGDQLQDQAFSVLYEM 83

Qy 61 LQGSFNLFYTEHSSAANDTTLLLEQLCTGLQOOLDHLDTCRGOVMGEEDSELGNMDPIVTY 120
Db 84 LQGSFNVFHTSHSSAANNWTTLLLEQLCTGLQOOLDHLDTCRGOVMGKDESELGKMDPIVTY 143

Qy 121 KKYFQGIYDYLQEGKSGDCAWEIVRVENMRALTSTTTLQKRLTKMGDLNSP 172
Db 144 KKYFQGIHDIYLOEGKSGDCAWEIVRVENMRALTSTTTLQKRLTKMGDLNSP 195

RESULT 8
I47067
trophoblast protein-1 - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 09-Jul-2004
C:Accession: I47067
R:Nephew, K.P.; Whaley, A.E.; Christenson, R.K.; Imakawa, K.
Biol. Reprod. 48, 768-778, 1993
A:Title: Differential expression of distinct mRNAs for ovine trophoblast protein-1 and r
A:Reference number: I46397; MUID:93250155; PMID:8485241
A:Accession: I47067
A>Status: preliminary; translated from GB/EMBL/DBDJ
A:Molecule type: DNA
A:Residues: 1-195 <NEP>
A:CROSS-references: UNIPROT:Q08053; GB:M88770; NID:g165822; PIDN:AAA31504.1; PID:g165823
C:Genetics:
A:Gene: TP-02

```

C:Superfamily: interferon alpha

Query Match 89.3%; Score 810; DB 2; Length 195;
Best Local Similarity 90.1%; Pred. No. 1.1e-66;
Matches 155; Conservative 8; Mismatches 9; Indels 0; Gaps 0;

QY 1 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFHTERSAAWNTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 195

RESULT 9

I47097
trophoblast protein-1 - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 09-Jul-2004
C:Accession: I47097
R:Leaman, D.W.; Roberts, R.M.
J: Interferon Res. 12, 1-11, 1992
A:Title: Genes for the trophoblast interferons in sheep, goat, and musk ox and distributed
A:Reference number: I46272; MUID:92242937; PMID:1374107
A:Accession: I47097
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-195 <EA>
A:Cross-references: UNIPROT:P28169; GB:M73241; NID:g166025; PIDN:AAA31573.1; PID:g166026
C:Genetics:
A:Gene: OTP-1
C:Superfamily: interferon alpha

Query Match 86.2%; Score 782; DB 2; Length 195;
Best Local Similarity 87.2%; Pred. No. 3.8e-64;
Matches 150; Conservative 12; Mismatches 10; Indels 0; Gaps 0;

QY 1 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFHTERSAAWNTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 195

RESULT 10

I47098
trophoblast protein-1 - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 16-Jul-1999
C:Accession: I47098
R:Leaman, D.W.; Roberts, R.M.
J: Interferon Res. 12, 1-11, 1992
A:Title: Genes for the trophoblast interferons in sheep, goat, and musk ox and distributed
A:Reference number: I46272; MUID:92242937; PMID:1374107
A:Accession: I47098
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-184 <EA>
A:Cross-references: GB:M73242; NID:g166027; PIDN:AAA31574.1; PID:g166028
C:Genetics:
A:Gene: OTP-1
C:Superfamily: interferon alpha

Query Match 82.6%; Score 749; DB 2; Length 184;
Best Local Similarity 89.4%; Pred. No. 3.6e-61;
Matches 143; Conservative 9; Mismatches 8; Indels 0; Gaps 0;

QY 1 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFHTERSAAWNTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOK 160
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSVTTLUK 183

RESULT 11

A39505
trophoblast interferon 4 precursor (clone bTP4) - bovine
C:Species: Bos primigenius taurus (cattle)
C:Date: 30-Dec-1991 #sequence_revision 30-Dec-1991 #text_change 09-Jul-2004
C:Accession: A39505
R:Hansen, T.R.; Leaman, D.W.; Cross, J.C.; Mathialagan, N.; Bixby, J.A.; Roberts, R.M.
J: Biol. Chem. 266, 3060-3067, 1991
A:Title: The genes for the trophoblast interferons and the related interferon-alphaII por
A:Reference number: A39505; MUID:91131606; PMID:1704373
A:Accession: A39505
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-195 <HAN>
A:Cross-references: UNIPROT:P15696; GB:M60908; NID:g163213; PIDN:AAA62711.1; PID:g163214;
C:Superfamily: interferon alpha
F:1-23/Domain: signal sequence #status predicted <SIG>
F:24-195/Product: interferon alpha-II #status predicted <MAT>

Query Match 80.4%; Score 729; DB 2; Length 195;
Best Local Similarity 81.3%; Pred. No. 2.6e-59;
Matches 139; Conservative 14; Mismatches 18; Indels 0; Gaps 0;

QY 1 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRLMLDARENKLLDRNRLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFYTEHSSAAWNTLLLEQLCTGLQQQLDHLDTCRGOVMGEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNS 171
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTSSVTTLOKRLTKMGGLNS 194

RESULT 12

S23751
trophoblast interferon type I precursor - bovine
C:Species: Bos primigenius taurus (cattle)
C:Date: 19-Feb-1994 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
C:Accession: S23751
R:Stewart, H.J.; McCann, S.H.E.; Flint, A.P.F.
J: Mol. Endocrinol. 4, 275-282, 1990
A:Title: Structure of an interferon-alpha2 gene expressed in the bovine conceptus early j
A:Reference number: S23751; MUID:90334707; PMID:2378676
A:Accession: S23751
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-195 <STE>
A:Cross-references: UNIPROT:P15696; EMBL:X65539; NID:g765; PIDN:CAA46506.1; PID:g766
C:Superfamily: interferon alpha

Query Match 80.2%; Score 727; DB 2; Length 195;
Best Local Similarity 81.3%; Pred. No. 4e-59;

[illegible]

RESULT 13

K250L1 13
 trophoblast protein-1 precursor (clone bTP509) - bovine
 C;Species: Bos primigenius taurus (cattle)
 C;Date: 28-Feb-1992 #sequence_revision 28-Feb-1992 #text_change 09-Jul-2004
 C;Accession: A40068
 R;Imakawa, K.; Hansen, T.R.; Malathy, P.V.; Anthony, R.V.; Polites, H.G.; Marotti, K.R.
 M;Endocrinol. 3, 127-139, 1989
 A;Title: Molecular cloning and characterization of complementary deoxyribonucleic acids
 from alpha-II.
 A;Reference number: A40068; MUID:89127268; PMID:2521687
 A;Accession: A40068
 A;Status: Preliminary
 A;Molecule type: mRNA
 A;Residues: 1-195 <MA>
 A;Cross-references: UNIPROT:Q9MYK6; UNIPROT:Q9GLL6; GB:M31556
 C;Superfamily: interferon alpha
 F;1-23/Domain: signal sequence #status predicted <SIG>
 F;24-195/Product: trophoblast protein-1 #status predicted <MAT>

RESULT 14

trophoblast protein-1 precursor (clone 330) - bovine
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 30-Dec-1991 #sequence_revision 30-Dec-1991 #text_change 09-Jul-2004
 C:Accession: B39505
 R:Hansen, T.R.; Leaman, D.W.; Cross, J.C.; Mathialagan, N.; Bixby, J.A.; Roberts, R.M.
 J. Biol. Chem. 266, 3060-3067, 1991
 A:Title: The genes for the trophoblast interferons and the related interferon-alphaII p
 A:Reference number: A39505; MUID:91131606; PMID:1704373
 A:Accession: B39505
 A:Status: preliminary
 A:Molecule type: DNA
 A:Cross-references: 1-195 <HAN>
 A:Residues-references: UNIPROT:P15696; GB:M60903; GB:M38189; NID:G2340962; PIDN:AAB67325.1;
 C:Superfamily: Interferon alpha
 F:1-23/Domain: signal sequence #status predicted <SIG>
 F:124-195/Product: trophoblast protein-1 #status predicted <MAT>

Query Match 79.8%; Score 724; DB 2; Length 195;
Best Local Similarity 81.3%; Pred. No. 7.5e-59;

	Matches	139;	Conservative	13;	Mismatches	19;	Indels	0;	Gaps	0;
Qy	1	CYLSERLMLDARENLKLDNRNRLSPHSCQLQRKDQFGLPQEMVEGQLOKQDAFFVLYEM	60							
				:		:		:		:
Ddb	24	CYLSHDHMLGARENLELLARMNRLSPHPCLDRKDFELPQEMVEGNQLKQDAISVLHEM	83							
				:		:		:		:
Qy	61	LQOSFNLFYTEHSAAAWDTTLTLEQLCTGLQQQLDHDLTCRGQVMGBEDSELGNMDPIVTV	120							
				:		:		:		:
Ddb	- 84	LQOCLNLFYTEHSAAWNTTLTLEQLCTGLQQOLELDDACLGPWGEKSDMGMRGPIITV	143							
				:		:		:		:
Qy	121	KKYFOGIYDYLBQKGYSDCAWEIVRVMRRALTVSTTLQKRLTYMGDDLNS	171							
				:		:		:		:
Ddb	144	KKYFOGIHYLVLEKEYSDCAWEIIRVEMRRALSSTTTLOKLRLKMGGDLNS	194							
				:		:		:		:

RESULT 15

RESUL 15
 A53746
 interferon, trophoblast - human
 C;Species: Homo sapiens (man)
 C;Date: 07-Oct-1994 #sequence_revision 07-Oct-1994 #text_change 09-Jul-2004
 C;Accession: A53746
 R;Whaley, A.E.; Meka, C.S.R.; Harbison, L.A.; Hunt, J.S.; Imakawa, K.
 J. Biol. Chem. 269, 10864-10868, 1994
 A;Title: Identification and cellular localization of unique interferon mRNA from human pJ
 A;Reference number: A53746; MUID:94193794; PMID:7511610
 A;Accession: A53746
 A;Status: preliminary
 A;Molecule type: mRNA
 A;Residues: 1-195 <NHA>
 A;Cross-references: UNIPROT:P37290; GB:L25664; NID:g479010; PIDN:AAA36123.1; PID:g479011
 C;Superfamily: interferon alpha

Search completed: October 28, 2005, 15:00:53
Job time : 26 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:49:06 ; Search time 115.5 Seconds
(without alignments)
762.577 Million cell updates/sec

Title: US-10-719-472-3

Perfect score: 907

Sequence: 1 CYLSRLMLDARENKLLDR.....TVSTTLQKRLTKXGDLNSP 172

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 10%

Listing first 45 summaries

Database : Uniprot 03:*

1: uniprot_sprot:*

2: uniprot_treml:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB	ID	Description
1	904	99.7	195	1	INT2 SHEEP	P56829 ovis aries
2	899	99.1	195	1	INT1 SHEEP	P56828 ovis aries
3	896	98.8	172	1	INT3 SHEEP	P56832 ovis aries
4	885	97.6	195	1	INT4 SHEEP	Q28594 ovis aries
5	881	97.1	195	1	INT5 SHEEP	Q28595 ovis aries
6	878	96.8	195	1	INT7 SHEEP	Q08071 ovis aries
7	872	96.1	195	1	INT9 SHEEP	Q08070 ovis aries
8	869	95.8	195	1	INT8 SHEEP	Q08072 ovis aries
9	844	93.1	195	1	INT CAPRI	P28171 capra hircu
10	834	92.0	195	1	INT6 SHEEP	Q29429 ovis aries
11	828	91.3	195	2	Q6U249	Q6u249 capra hircu
12	828	91.3	195	2	Q6U250	Q6u250 capra hircu
13	820	90.4	172	2	Q6RPF28	Q6rfz8 ovis aries
14	810	89.3	195	1	INTA SHEEP	Q08053 ovis aries
15	802	88.4	195	2	Q6U247	Q6u247 capra hircu
16	782	87.3	195	2	Q6U243	Q6u243 capra hircu
17	784	86.4	195	2	Q6U242	Q6u242 capra hircu
18	782	86.2	195	1	INTB SHEEP	P28169 ovis aries
19	778	85.8	195	1	INT OVIMO	P28172 ovibos mosc
20	730	80.5	195	1	INT1 BOVIN	P15696 bos taurus
21	725	79.9	172	1	INT2 BOVIN	P56830 bos taurus
22	723	79.7	172	2	Q8M329	Q8m329 bos taurus
23	723	79.7	195	2	Q9MYK6	Q9myk6 bos taurus
24	711	78.4	172	1	INT3 BOVIN	P56831 bos taurus
25	706	77.8	195	2	Q9GLI6	Q9gl16 bos taurus
26	700	77.2	172	2	Q6DUH3	Q6duh3 bison bison
27	698	77.0	195	2	Q9GLI5	Q9gl15 bos taurus
28	684	75.4	195	1	INT GIRCA	Q95187 giraffa cam
29	654	72.1	195	1	INT CEREL	O46633 cervus elap
30	610	67.3	195	1	IND1 HUMAN	P37290 homo sapien
31	609	67.1	195	2	Q7M2Y7	Q7m2y7 ovis aries

32	588	64.8	195	2	P28170	P28170 ovis aries
33	586	64.6	195	2	Q28561	Q28561 ovis aries
34	583	64.3	195	1	INO1 BOVIN	P07352 bos taurus
35	531	58.5	129	2	Q6SMQ8	Q6smq8 bos mutus g
36	514.5	56.7	190	2	Q29085	Q29085 sus scrofa
37	500	55.1	195	1	INO2 HORSE	P05002 equus cabal
38	489.5	54.0	190	2	Q29098	Q29098 sus scrofa
39	474	52.3	195	1	INO1 HUMAN	P05000 homo sapien
40	470.5	51.9	179	2	Q29084	Q29084 sus scrofa
41	463	51.0	174	2	Q13168	Q13168 homo sapien
42	443	48.8	195	1	INO1 HORSE	P05001 equus cabal
43	441	48.6	189	1	INA5 HUMAN	P01569 homo sapien
44	441	48.6	189	1	INAD HUMAN	P01570 homo sapien
45	439	48.4	189	1	INAG HUMAN	P01571 homo sapien

ALIGNMENTS

RESULT 1
ID INT2 SHEEP STANDARD; PRT; 195 AA.
AC P56829; P08316;
DT 01-AUG-1988 (Rel. 08, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Interferon tau-2 precursor (IFN-tau2) (Trophoblast protein-1) (TP-1)
DE (Trophoblastin) (Antitileolysin) (Trophoblast antitileolytic protein).
DE Name=IFNT2;
GN Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RX SEQUENCE FROM N.A. (IFN-TAU2C).
RA MEDLINE=90040431; PubMed=2530342;
RA Stewart H.J., Flint A.P., Lamming G.E., McCann S.H., Parkinson T.J.;
RT "Antitileolytic effects of blastocyst-secreted interferon investigated in vitro and in vivo in the sheep";
RL J. Reprod. Fertil. Suppl. 37:127-138 (1989).
RN [2]
RX SEQUENCE FROM N.A. (IFN-TAU2C).
RA MEDLINE=89351557; PubMed=2475129;
RA Stewart H.J., McCann S.H., Northrop A.J., Lamming G.E., Flint A.P.;
RT "Sheep antitileolytic interferon: cDNA sequence and analysis of mRNA levels";
RL J. Mol. Endocrinol. 2:65-70 (1989).
RN [3]
RX SEQUENCE FROM N.A. (IFN-TAU2C).
RA TISSUE=Embryo;
RC MEDLINE=89326151; PubMed=2753362; DOI=10.1016/0378-1119(89)90082-6;
RX Charlier M., Hue D., Martal J., Gaye P.;
RT "Cloning and expression of cDNA encoding ovine trophoblastin: its identity with a class-II alpha interferon";
RL Gene 77:341-348 (1989).
RN [4]
RX SEQUENCE FROM N.A. (IFN-TAU2C).
RA MEDLINE=91067497; PubMed=1701245;
RA Klemann S.W., Imakawa K., Roberts R.M.;
RT "Sequence variability among ovine trophoblast interferon cDNA";
RL Nucleic Acids Res. 18:6724-6724 (1990).
RN [5]
RX SEQUENCE OF 24-195 FROM N.A. (IFN-TAU2A AND IFN-TAU2B).
RC TISSUE=Embryo;
RA Winkelman G.L., Roberts R.M., Peterson A.J., Alexenko A.P., Ealy A.D.;
RT "Identification of the expressed forms of ovine interferon-tau in the peri-implantation conceptus: sequence relationships and comparative biological activities";
RL Submitted (JUN-1999) to the EMBL/GenBank/DBJ databases.
RN [6]
RX SEQUENCE OF 24-68.
RA MEDLINE=88137579; PubMed=3254170; DOI=10.1016/0014-5793(88)80574-X;

RA Charpigny G., Reinaud P., Huet J.-C., Guillemot M., Charlier M.,
RA Pernollet J.-C., Martal J.;
RT "High homology between a trophoblastic protein (trophoblastin)
RT isolated from ovine embryo and alpha-interferons.";
RL FEBS Lett. 228:12-16(1988).
RN [7]
RX FUNCTION.
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen
RT receptor and oxytocin receptor genes in the ovine endometrium.";
RL Endocrinology 137:1144-1147(1996).
RN [8]
RP CIRCULAR DICHOISM ANALYSIS AND 3D-STRUCTURE MODELING.
RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau.";
RL Protein Eng. 7:863-867(1994).
RN [9]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau.";
RL J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [10]
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Martal J.L., Chene N.M., Huynh L.P., L'Hardon R.M., Reinaud P.B.,
RA Guillemot M.W., Charlier M.A., Charpigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
RT ubiquitous expression, structure-function relationships, a pregnancy
RT hormonal embryonic signal and cross-species therapeutic
RT potentialities.";
RL Biochimie 80:755-777(1998).
CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal
CC recognition of pregnancy. Interacts with endometrial receptors,
CC probably type I interferon receptors, and blocks estrogen receptor
CC expression, preventing the estrogen-induced increase in oxytocin
CC receptor expression in the endometrium. This results in the
CC suppression of the pulsatile endometrial release of the luteolytic
CC hormone prostaglandin F2-alpha, hindering the regression of the
CC corpus luteum (luteolysis) and therefore a return to ovarian
CC cyclicity. This, and a possible direct effect of IFN-tau on
CC prostaglandin synthesis, leads in turn to continued ovarian
CC progesterone secretion, which stimulates the secretion by the
CC endometrium of the nutrients required for the growth of the
CC conceptus. In summary, displays particularly high antiviral and
CC antiproliferative potency concurrently with particularly weak
CC cytotoxicity, high antiluteolytic activity and immunomodulatory
CC properties. In contrast with other IFNs, IFN-tau is not virally
CC inducible.
CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
CC the mononuclear cells of the extra-embryonic trophoctoderm.
CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
CC sheep conceptus between days 13 and 21 of pregnancy.
CC -!- POLYMORPHISM: There seems to be three variants of IFN-tau 2:
CC A/P8V2/P7 (shown here), B/P8V4 and C/P8.
CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
CC IFN-omega genes in the ruminantia suborder and have continued to
CC duplicate independently in different lineages of the ruminantia.
CC They encode for proteins very similar in sequence but with
CC different biological potency and pattern of expression.
CC -!- SIMILARITY: belongs to the alpha/beta interferon family. IFN-
CC alphaII subfamily.

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CC EMBL; X07920; CAA30753.1; -.
CC EMBL; M26386; AAA31584.1; -.
CC EMBL; X56344; CAA39784.1; -.
CC EMBL; X56345; CAA39785.1; -.
CC EMBL; AF158818; AAD44970.1; -.
CC EMBL; AF158820; AAD44972.1; -.
CC PIR; S03799; JS0204.
CC HSSP; P56828; 1B5L.
CC InterPro; IPR009079; 4_helix_cytokine.
CC InterPro; IPR000471; Interferon_abd.
CC Pfam; PF00143; Interferon; 1.
CC PRINTS; PR00266; INTERFERONAB.
CC PRODOM; PD000550; Interferon_abd; 1.
CC PROSITE; PS00252; INTERFERON_A_B_D; 1.
CC Antiviral; Cytokine; Direct protein sequencing; Hormone;
KW Multigene family; Polymorphism; Pregnancy; Signal.
FT SIGNAL 1 23
FT CHAIN 24 195 Interferon tau-2.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
FT VARIANT 106 106 E -> D (in IFN-tau2C).
FT VARIANT 130 130 E -> K (in IFN-tau2B).
SQ SEQUENCE 195 AA; 22192 MW; EC4DEE507C269C67 CRC64;
Query Match 99.7%; Score 904; DB 1; Length 195;
Best Local Similarity 99.4%; Pred. No. 1.7e-75;
Matches 171; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
Qy 1 CYLSERMLDARENKLLDRNRLSPHSCLDQRKDFGLPQEMVSGDQLQKDAQFPVLVEM 60
Db 24 CYLSQRLMLDARENKLLDRNRLSPHSCLDQRKDFGLPQEMVSGDQLQKDAQFPVLVEM 83
Qy 61 LQSQFNLFYTEHSSAAWDTTLLEQLCTGLQQLDHLDTCRQVNGEEDSELGNMDPIVTV 120
Db 84 LQSQFNLFYTEHSSAAWDTTLLEQLCTGLQQLDHLDTCRQVNGEEDSELGNMDPIVTV 143
Qy 121 KKYPQGIYDLOEKYSDCAWIYRVEMRALTVSTTLQKRLTKMGDLNSP 172
Db 144 KKYPQGIYDLOEKYSDCAWIYRVEMRALTVSTTLQKRLTKMGDLNSP 195
RESULT 2
INT1_SHEEP STANDARD; PRT; 195 AA.
AC P56828; P08316;
DT 01-AUG-1988 (Rel. 08, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Interferon tau-1 precursor (IFN-tau1) (Trophoblast protein-1) (TP-1)
DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein).
GN Name=IFN1; Synonyms=OTF;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Trophoblast;
RX MEDLINE=86065855; PubMed=2446135; DOI=10.1038/330377a0;
RA Imakawa K., Antony R.V., Kazemi M., Marotti K.R., Polites H.G.,
RA Roberts R.M.;
RT "Interferon-like sequence of ovine trophoblast protein secreted by
RT embryonic trophoctoderm.";
RL Nature 330:377-379(1987).
RN [2]
RP FUNCTION.
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen
RT receptor and oxytocin receptor genes in the ovine endometrium.";
RN [3]

Endocrinology 137:1144-1147(1996).

[3] CIRCULAR DICHROISM ANALYSIS, AND 3D-STRUCTURE MODELING.

MEDLINE=95062134; PubMed=7971949;

Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V., Krishna N.R., Pontzer C.H.;

"Predicted structural motif of IFN tau.";

Protein Eng. 7:863-867(1994).

[4] 3D-STRUCTURE MODELING.

MEDLINE=96318252; PubMed=8746786;

Senda T., Saitoh S.-I., Mitui Y., Li J., Roberts R.M.;

"A three-dimensional model of interferon-tau.";

J. Interferon Cytokine Res. 15:1053-1060(1995).

[5] REVIEW.

MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;

Martel J.L., Chene N.M., Huynh L.P., L'Haron R.M., Reinaud P.B., Guillomot M.W., Charlier M.A., Charpigny S.Y.;

"IFN-tau: a novel subtype I IFN1. Structural characteristics, non-ubiquitous expression, structure-function relationships, a pregnancy hormonal embryonic signal and cross-species therapeutic potentialities.";

Biochimie 80:755-777(1998).

-!- FUNCTION: Paracrine hormone primarily responsible for maternal recognition of pregnancy. Interacts with endometrial receptors, probably type I interferon receptors, and blocks estrogen receptor expression, preventing the estrogen-induced increase in oxytocin receptor expression in the endometrium. This results in the suppression of the pulsatile endometrial release of the luteolytic hormone prostaglandin F2-alpha, hindering the regression of the corpus luteum (luteolysis) and therefore a return to ovarian cyclicity. This, and a possible direct effect of IFN-tau on prostaglandin synthesis, leads in turn to continued ovarian progesterone secretion, which stimulates the secretion by the endometrium of the nutrients required for the growth of the conceptus. In summary, displays particularly high antiviral and antiproliferative potency concurrently with particular weak cytotoxicity, high antiluteolytic activity and immunomodulatory properties. In contrast with other IFNs, IFN-tau is not virally inducible.

-!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

-!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in the mononuclear cells of the extra-embryonic trophoblast.

-!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the sheep conceptus between days 13 and 21 of pregnancy.

-!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from IFN-omega genes in the ruminantia suborder and have continued to duplicate independently in different lineages of the ruminantia. They encode for proteins very similar in sequence but with different biological potency and pattern of expression.

-!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-alphaII subfamily.

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EMBL; Y00287; CAA68396.1; -

PIR; S03799; JS0204.

PDB; 1BSL; X-ray; @=24-195.

InterPro; IPR009079; 4_helix_cytokine.

InterPro; IPR000471; Interferon_abd.

Pfam; PF00143; Interferon; 1.

PRINTS; PR00266; INTERFERONAB.

ProDom; PD000550; Interferon_abd; 1.

PROSITE; PS00252; INTERFERON_A_B_D; 1.

3D-structure; Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.

FT SIGNAL 1 23 By similarity.

FT CHAIN 24 195 Interferon tau-1.

FT DISULFID 24 122 By similarity.

FT DISULFID 52 162 By similarity.

FT TURN 25 26

FT HELIX 27 46

FT TURN 47 47

FT TURN 63 63

FT HELIX 64 68

FT TURN 69 69

FT HELIX 73 95

FT TURN 96 97

FT TURN 100 101

FT HELIX 103 122

FT HELIX 138 156

FT TURN 157 159

FT HELIX 161 186

SQ SEQUENCE 195 AA; 22192 MW; A4965AE25DEASBC9 CRC64;

Query Match 99.1%; Score 899; DB 1; Length 195;

Best Local Similarity 98.8%; Pred. No. 5e-75;

Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSERLMLDARENKLLDRNMRLSPHSCLOQRKDFGLPQEMVEGDLQKQDAFPVLYEM 60

DB 24 CYLSERLMLDARENKLLDRNMRLSPHSCLOQRKDFGLPQEMVEGDLQKQDAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120

DB 84 LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 143

QY 121 KKYFGIYDYLOEKGYSCAMEIVRVMRALTVTTLQKRLTKMGDLNSP 172

DB 144 KKYFGIYDYLOEKGYSCAMEIVRVMRALTVTTLQKRLTKMGDLNSP 195

RESULT 3

ID INT3 SHEEP STANDARD; PRT; 172 AA.

AC P56832;

DT 30-MAY-2000 (Rel. 39, Created)

DT 30-MAY-2000 (Rel. 39, Last sequence update)

DT 05-JUL-2004 (Rel. 44, Last annotation update)

DE Interferon tau-3 (IFN-tau3) (Trophoblast protein-1) (TP-1)

DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein).

GN Name=IFNT3;

OS Ovis aries (Sheep).

OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

OC Caprinae; Ovis.

OX NCBI_TaxID=9940;

RN [1] SEQUENCE FROM N.A.

RP TISSUE=Embryo;

RA Winkelman G.L., Roberts R.M., Peterson A.J., Alexenko A.P., Ealy A.D.;

RT "Identification of the expressed forms of ovine interferon-tau in the peri-implantation conceptus: sequence relationships and comparative biological activities.";

RL Submitted (JUN-1999) to the EMBL/GenBank/DBJ databases.

RN [2] FUNCTION.

RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;

RA Spencer T.E., Bazer F.W.;

RT "Ovine interferon tau suppresses transcription of the estrogen receptor and oxytocin receptor genes in the ovine endometrium.";

RL Endocrinology 137:1144-1147(1996).

RN [3] CIRCULAR DICHROISM ANALYSIS, AND 3D-STRUCTURE MODELING.

RX MEDLINE=95062134; PubMed=7971949;

RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V., Krishna N.R., Pontzer C.H.;

RT "Predicted structural motif of IFN tau.";

RL Protein Eng. 7:863-867(1994).

RNA	[4]	3D-STRUCTURE MODELING.
RP		MEDLINE=96318252; PubMed=8746786;
RX		Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RA		"A three-dimensional model of interferon-tau";
RT		J. Interferon Cytokine Res. 15:1053-1060(1995).
RL	[5]	
RP		REVIEW.
RX		MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA		Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
RT		Guillemot M.W., Charlier M.A., Chardigny S.Y.
RL		"IFN-tau: a novel subtype I IFN. Structural characteristics, non-
RP		ubiquitous expression, structure-function relationships, a pregnancy
RX		hormonal embryonic signal and cross-species therapeutic
RA		potentialities.";
RT		Biochimie 80:755-777(1998).
RL		
RP	-1-	FUNCTION: Paracrine hormone primarily responsible for maternal
RX		recognition of pregnancy. Interacts with endometrial receptors,
RA		probably type I interferon receptors, and blocks estrogen receptor
RT		expression, preventing the estrogen-induced increase in oxytocin
RL		receptor expression in the endometrium. This results in the
RP		suppression of the pulsatile endometrial release of the luteolytic
RX		hormone, prostaglandin F2-alpha, hindering the regression of the
RA		corpus luteum (luteolysis) and therefore a return to ovarian
RT		cyclicity. This, and a possible direct effect of IFN-tau on
RL		prostaglandin synthesis, leads in turn to continued ovarian
RP		progesterone secretion, which stimulates the secretion by the
RX		endometrium of the nutrients required for the growth of the
RA		conceptus. In summary, displays particularly high antiviral and
RT		antiproliferative potency concurrently with particular weak
RL		cytotoxicity, high antiluteolytic activity and immunomodulatory
RP		properties. In contrast with other IFNs, IFN-tau is not virally
RX		inducible.
RA		
RL		
RP	-1-	SUBCELLULAR LOCATION: Secreted into the uterine lumen.
RX		
RA		TISSUE SPECIFICITY: Constitutively and exclusively expressed in
RT		the mononuclear cells of the extra-embryonic trophoctoderm.
RL		
RP	-1-	DEVELOPMENTAL STAGE: Major secretory product synthesized by the
RX		sheep conceptus between days 13 and 21 of pregnancy.
RA		
RL		
RP	-1-	POLYMORPHISM: There seems to be two variants of IFN-tau 3: A/P8V1
RX		(shown here) and B/P8V3.
RA		
RL		
RP	-1-	MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
RX		IFN-omega genes in the ruminantia suborder and have continued to
RA		duplicate independently in different lineages of the ruminantia.
RT		They encode for proteins very similar in sequence but with
RL		different biological potency and pattern of expression.
RP		
RX	-1-	SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
RA		alpha1 subfamily.
RT		
RL		
RP		-----
RX		This SWISS-PROT entry is copyright. It is produced through a collaboration
RA		between the Swiss Institute of Bioinformatics and the EMBL outstation -
RT		the European Bioinformatics Institute. There are no restrictions on its
RL		use by non-profit institutions as long as its content is in no way
RP		modified and this statement is not removed. Usage by and for commercial
RX		entities requires a license agreement (see http://www.isb-sib.ch/announce/
RA		or send an email to license@isb-sib.ch).
RT		-----
RL		
RP		EMBL; AF158817; AAD44969.1; -;
RX		EMBL; AF158819; AAD44971.1; -;
RA		HSSP; P56828; 185L.
RT		InterPro; IPR009079; 4_helix_cytokine.
RL		InterPro; IPR000471; Interferon_abd.
RP		Pfam; PF00143; Interferon; 1.
RX		PRINTS; PR00266; INTERFERONAB.
RA		ProDom; PD000550; Interferon_abd; 1.
RT		PROSITE; PS00252; INTERFERON_A_B_D; FALSE_NEG.
RL		Antiviral; Cytokine; Hormone; Multi-gene family; Polymorphism;
RP		Pregnancy.
RX		DISULFID 1 99 By similarity.
RA		DISULFID 29 139 By similarity.
RT		VARIANT 87 87 T->S (in isoform B).
RL		VARIANT 124 125 FE -> SQ (in isoform B).
RP		VARIANT 130 130 L -> Y (in isoform B).
RX		SEQUENCE 172 AA; 139866 MW; 7BF1F036545C8E2 CRC64;

Query Match	98.8%	Score 896	DB 1	Length 172
Best Local Similarity	98.8%	Pred. No. 8.1e-75		
Matches 170	Conservative	1	Mismatches	0
			Indels	Gaps
Qy	1	CYLSERLMLDARENLKLLDRMRLSPHSCLODKRDKFGLPOEMVEGDOLQKDOAFVLVYM	60	
Dd	1	CYLSERLMLDARENLKLLDRMRLSPHSCLODKRDKFGLPOEMVEGDOLQKDOAFVLVYM	60	
Qy	61	LQGSFNLFYTEHSSAANDTTLLLEQLCTGLQOQLDHLDTCRGVNMGEEDESELGNMDPIVTV	120	
Dd	61	LQGSFNLFYTEHSSAANDTTLLLEQLCTGLQOQLDHLDTCRGVNMGEEDESELGNMDPIVTV	120	
Qy	121	KKYPQGYDYLQEGYSGDCAWEIVRVEMRALTVSTTLQKRLTKMGDLNSP	172	
Dd	121	KKYPEGIYDYLQEGYSGDCAWEIVRVEMRALTVSTTLQKRLTKMGDLNSP	172	
RESULT 4				
ID	INT4 SHEEP	STANDARD;	PRT;	195 AA.
AC	Q28594;			
DT	30-MAY-2000 (Rel. 39, Created)			
DT	30-MAY-2000 (Rel. 39, Last sequence update)			
DT	05-JUL-2004 (Rel. 44, Last annotation update)			
DE	Interferon tau-4 precursor (IFN-tau4) (Trophoblast protein-1) (TP-1)			
DE	(Trophoblastin) (Antilutealysin) (Trophoblast antiluteolytic protein)			
DE	(P3).			
GN	Name=IFNT4;			
OS	Ovis aries (Sheep).			
OC	Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;			
OC	Caprinae; Ovis.			
OX	NCBI_TaxID=9940;			
RN	[1]			
RN	SEQUENCE FROM N.A.			
RP	TISSUE=Embryo;			
RC	MEDLINE=91067497; PubMed=1701245;			
RX	Klemann S.W., Imakawa K., Roberts R.M.;			
RA	"Sequence variability among ovine trophoblast interferon cDNA.";			
RT	Nucleic Acids Res. 18:6724-6724(1990).			
RL	[2]			
RN	FUNCTION.			
RP	MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;			
RX	Spencer T.E., Bazer F.W.;			
RA	"Ovine interferon tau suppresses transcription of the estrogen			
RT	receptor and oxytocin receptor genes in the ovine endometrium.";			
RL	Endocrinology 137:1144-1147(1996).			
RN	[3]			
RP	CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.			
RX	MEDLINE=95062134; PubMed=7971949;			
RA	Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,			
RT	Krishna N.R., Pontzer C.H.;			
RL	"Predicted structural motif of IFN tau.";			
RP	Protein Eng. 7:863-867(1994).			
RN	[4]			
RP	3D-STRUCTURE MODELING.			
RX	MEDLINE=96318252; PubMed=8746786;			
RA	Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;			
RT	"A three-dimensional model of interferon-tau.";			
RL	J. Interferon Cytokine Res. 15:1053-1060(1995).			
RN	[5]			
RP	REVIEW.			
RX	MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;			
RA	Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,			
RT	Guillomot M.W., Charlier M.A., Chapigny S.Y.;			
RL	"IFN-tau: a novel subtype I IFN. Structural characteristics, non-			
RT	ubiquitous expression, structure-function relationships, a pregnancy			
RT	hormonal embryonic signal and cross-species therapeutic			
RT	potentialities.";			
RL	Biochimie 80:755-777(1998).			
CC	-1- FUNCTION: Paracrine hormone primarily responsible for maternal			
CC	recognition of pregnancy. Interacts with endometrial receptors,			

probably type I interferon receptors, and blocks estrogen receptor expression, preventing the estrogen-induced increase in oxytocin receptor expression in the endometrium. This results in the suppression of the pulsatile endometrial release of the luteolytic hormone prostaglandin F2-alpha, hindering the regression of the corpus luteum (luteolysis) and therefore a return to ovarian cyclicity. This, and a possible direct effect of IFN-tau on prostaglandin synthesis, leads in turn to continued ovarian progesterone secretion, which stimulates the secretion by the endometrium of the nutrients required for the growth of the conceptus. In summary, displays particularly high antiviral and antiproliferative potency concurrently with particular weak cytotoxicity, high antiluteolytic activity and immunomodulatory properties. In contrast with other IFNs, IFN-tau is not virally inducible.

-!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

-!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in the mononuclear cells of the extra-embryonic trophoctoderm.

-!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the sheep conceptus between days 13 and 21 of pregnancy.

-!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from IFN-omega genes in the ruminantia suborder and have continued to duplicate independently in different lineages of the ruminantia. They encode for proteins very similar in sequence but with different biological potency and pattern of expression.

-!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-alphaII subfamily.

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EMBL; X56341; CAA93781.1; -;
HSP; P56828; 185L.
InterPro; IPR009079; 4_helix_cytokine.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; Interferon_1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
FT SIGNAL 1 23 By similarity.
FT CHAIN 24 195 Interferon tau-4.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
SQ SEQUENCE 195 AA; 22209 MW; 408BD4BDF5AA931 CRC64;

Query Match 97.6%; Score 885; DB 1; Length 195;
Best Local Similarity 97.1%; Pred. No. 9.9e-74;
Matches 167; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSERMLDARENKLLDRMRLSPHSCLOKDKFGLPQEMVEGDLQKQAPFLVYEM 60
DB 24 CYLSQRMLDARENKLLDRMRLSPHSCLOKDKFGLPQEMVEGDLQKQAPFLVYEM 83
QY 61 LQGSFNLFTYHSSAANDTTLLEOLCTGLQQLDHLDTCRGQVMEGDSGLGMDPIVTV 120
DB 84 LQGSFNLFTYHSSAANDTTLTDLQCTGLQQLDHLDTCRDQVMEGKSELGMDPIVTV 143
QY 121 KYFQGIYDYLQKGYSDCAWEIVRVMRALTVSTTLQKRLTKMGDLNSP 172
DB 144 KYFQGIHYDYLQKGYSDCAWEIVRVMRALTVSTTLQKRLTKMGDLNSP 195

RESULT 5
INT5 SHEEP
ID INT5 SHEEP PRT; 195 AA.
AC Q28595;
DT 30-MAY-2000 (Rel. 39, Created)

DT 30-MAY-2000 (Rel. 39, Last sequence update)
DE 05-JUL-2004 (Rel. 44, Last annotation update)
DE Interferon tau-5 precursor (IFN-tau5) (Trophoblast protein-1) (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein) (P5).
DE
GN Name=IFNT5;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]_TaxID=9940;
RP SEQUENCE FROM N.A.
RX MEDLINE=91067497; PubMed=1701245;
RA Klemann S.W., Imakawa K., Roberts R.M.;
RT "Sequence variability among ovine trophoblast interferon cDNA.";
RL Nucleic Acids Res. 18:6724-6724(1990).
RN [2]
RP FUNCTION.
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen receptor and oxytocin receptor genes in the ovine endometrium.";
RL Endocrinology 137:1144-1147(1996).
RN [3]
RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau.";
RL Protein Eng. 7:863-867(1994).
RN [4]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saichoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau.";
RL J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [5]
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Martal J.L., Chene N.M., Huynh L.P., L'Haron R.M., Reinaud P.B.,
RA Guillonot M.W., Charlier M.A., Charnigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-ubiquitous expression, structure-function relationships, a pregnancy hormonal embryonic signal and cross-species therapeutic potentialities.";
RL Biochimie 80:755-777(1998).
CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal recognition of pregnancy. Interacts with endometrial receptors, probably type I interferon receptors, and blocks estrogen receptor expression, preventing the estrogen-induced increase in oxytocin receptor expression in the endometrium. This results in the suppression of the pulsatile endometrial release of the luteolytic hormone prostaglandin F2-alpha, hindering the regression of the corpus luteum (luteolysis) and therefore a return to ovarian cyclicity. This, and a possible direct effect of IFN-tau on prostaglandin synthesis, leads in turn to continued ovarian progesterone secretion, which stimulates the secretion by the endometrium of the nutrients required for the growth of the conceptus. In summary, displays particularly high antiviral and antiproliferative potency concurrently with particular weak cytotoxicity, high antiluteolytic activity and immunomodulatory properties. In contrast with other IFNs, IFN-tau is not virally inducible.

-!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

-!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in the mononuclear cells of the extra-embryonic trophoctoderm.

-!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the sheep conceptus between days 13 and 21 of pregnancy.

-!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from IFN-omega genes in the ruminantia suborder and have continued to duplicate independently in different lineages of the ruminantia. They encode for proteins very similar in sequence but with

```

CC different biological potency and pattern of expression.
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
CC alphaII subfamily.
CC -----
CC This SWISS-PROT entry is copyrighted. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; X56342; CAA39782.1; -.
CC HSSP; P56828; 1BSL.
CC InterPro; IPR009079; 4_helix_cytokine.
CC InterPro; IPR000471; Interferon_abd.
CC Pfam; PF00143; Interferon; 1.
CC PRINTS; PR00266; INTERFERONAB.
CC PROSITE; PS00550; INTERFERON_A_B_D; 1.
CC Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
CC SIGNAL 1 23 By similarity.
CC CHAIN 24 195 Interferon tau-5.
CC DISULFID 24 122 By similarity.
CC FT DISULFID 52 162 By similarity.
CC SQ SEQUENCE 195 AA; 22163 MW; 14EA9038CB60A562 CRC64;

Query Match 97.1%; Score 881; DB 1; Length 195;
Best Local Similarity 96.5%; Pred. No. 2.3e-73;
Matches 166; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSRLMLDARENKLDNRNLSPHSCLODRKDFGLPQENVEGDQLQKQAPPLVYEM 60
Db |||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
24 CYLSRLMLDARENKLDNRNLSPHSCLODRKDFGLPQENVEGDQLQKQAPPLVYEM 83
QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db |||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
84 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 143
QY 121 KKYFGIYDYLOEKGYSCANEIVRVEMRALTIVSTTLQKRLTMGGDLNSP 172
Db |||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
144 KKYFGIYDYLOEKGYSCANEIVRVEMRALTIVSTTLQKRLTMGGDLNSP 195

RESULT 6
ID INT7_SHEEP STANDARD; PRT; 195 AA.
AC Q08071;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Interferon tau-7 precursor (IFN-tau7) (Trophoblast protein-1) (TP-1)
DE (Trophoblastin) (Antitileolysin) (Trophoblast antiluteolytic protein)
DE (TP-07).
GN Name=IFNT7;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]_
RN SEQUENCE FROM N.A.
RC TISSUE=Trophoctoderm;
RX MEDLINE=93250155; PubMed=8485241;
RA Nephew K.P., Whaley A.E., Christenson R.K., Imakawa K.;
RT "Differential expression of distinct mRNAs for ovine trophoblast
RL protein-1 and related sheep type I interferons.";
RL Biol. Reprod. 48:768-778(1993).
RN [2]_
RN FUNCTION.
RP MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RX Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen
KW Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.

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RT receptor and oxytocin receptor genes in the ovine endometrium.";
RN Endocrinology 137:1144-1147(1996).
RN [3]_
RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau.";
RL protein Eng. 7:863-867(1994).
RN [4]_
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau.";
RN J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [5]_
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Martal J.L., Chene N.M., Huynh L.P., L'Haron R.M., Reinaud P.B.,
RA Guillonot M.W., Charlier M.A., Charpigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
RT ubiquitous expression, structure-function relationships, a pregnancy
RT hormonal embryonic signal and cross-species therapeutic
RT potentialities.";
RL Biochimie 80:755-777(1998).
CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal
CC recognition of pregnancy. Interacts with endometrial receptors,
CC probably type I interferon receptors, and blocks estrogen receptor
CC expression, preventing the estrogen-induced increase in oxytocin
CC receptor expression in the endometrium. This results in the
CC suppression of the pulsatile endometrial release of the luteolytic
CC hormone prostaglandin F2-alpha, hindering the regression of the
CC corpus luteum (luteolysis) and therefore a return to ovarian
CC cyclicity. This, and a possible direct effect of IFN-tau on
CC prostaglandin synthesis, leads in turn to continued ovarian
CC progesterone secretion, which stimulates the growth of the
CC endometrium of the nutrients required for the growth of the
CC conceptus. In summary, displays particularly high antiviral and
CC antiproliferative potency concurrently with particular weak
CC cytotoxicity, high antiluteolytic activity and immunomodulatory
CC properties. In contrast with other IFNs, IFN-tau is not virally
CC inducible.
CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
CC the nonnuclear cells of the extra-embryonic trophoctoderm.
CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
CC sheep conceptus between days 13 and 21 of pregnancy.
CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
CC IFN-omega genes in the ruminantia suborder and have continued to
CC duplicate independently in different lineages of the ruminantia.
CC They encode for proteins very similar in sequence but with
CC different biological potency and pattern of expression.
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
CC alphaII subfamily.
CC -----
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CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; M88771; AAA31505.1; -.
CC PIR; I47068; I47068.
CC HSSP; P56828; 1BSL.
CC InterPro; IPR009079; 4_helix_cytokine.
CC InterPro; IPR000471; Interferon_abd.
CC Pfam; PF00143; Interferon; 1.
CC PRINTS; PR00266; INTERFERONAB.
CC PROSITE; PS00550; Interferon_abd; 1.
CC PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.

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FT SIGNAL 1 23 By similarity.
FT CHAIN 24 195 Interferon tau-7.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
SQ SEQUENCE 195 AA; 22223 MW; 144AEBE80ABA848 CRC64;

Query Match 96.8%; Score 878; DB 1; Length 195;
Best Local Similarity 96.5%; Pred. No. 4.4e-73;
Matches 146; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 CYLSERMLDARENKLLDRMNLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
DB 24 CYLSERMLDARENKLLDRMNLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 83
QY 61 LQOSFNLFYTHSSAAWDTTLLQLCTGLQQLDHLDTCRGQVMGEDESELGNMDDPIVTV 120
DB 84 LQOSFNLFYTHSSAAWDTTLLQLCTGLQQLDHLDTCRGQVMGEDESELGNMDDPIVTV 143
QY 121 KKYFGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
DB 144 KKYFGIHYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 195

RESULT 7
INT9_SHEEP STANDARD; PRT; 195 AA.
AC Q08070;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Interferon tau-9 precursor (IFN-tau9) (Trophoblast protein-1) (TP-1)
DE (Trophoblastin) (Antitileolysin) (Trophoblast antitileolytic protein)
DE (TP-010).
DE Names=IFNT9;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]_TaxID=9940;
RP SEQUENCE FROM N.A.
RC TISSUE=Trophoblast;
RX MEDLINE=93250155; PubMed=8485241;
RA Nephew K.P., Whaley A.E., Christenson R.K., Imakawa K.;
RT "Differential expression of distinct mRNAs for ovine trophoblast
RT protein-1 and related sheep type I interferons.";
RL Biol. Reprod. 48:768-778(1993).
RN [2]
RP FUNCTION.
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen
RT receptor and oxytocin receptor genes in the ovine endometrium.";
RL Endocrinology 137:1144-1147(1996).
RN [3]
RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau.";
RL Protein Eng. 7:863-867(1994).
RN [4]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau.";
RL J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [5]
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Marcal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
RA Guillomot M.W., Charlier M.A., Charpigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
```

```
RT ubiquitous expression, structure-function relationships, a pregnancy
RT hormonal embryonic signal and cross-species therapeutic
RT potentialities.";
RL Biochimie 80:755-777(1998).
CC -I- FUNCTION: Paracrine hormone primarily responsible for maternal
CC recognition of pregnancy. Interacts with endometrial receptors,
CC probably type I interferon receptors, and blocks estrogen receptor
CC expression, preventing the estrogen-induced increase in oxytocin
CC receptor expression in the endometrium. This results in the
CC suppression of the pulsatile endometrial release of the luteolytic
CC hormone prostaglandin F2-alpha, hindering the regression of the
CC corpus luteum (luteolysis) and therefore a return to ovarian
CC cyclicity. This, and a possible direct effect of IFN-tau on
CC prostaglandin synthesis, leads in turn to continued ovarian
CC progesterone secretion, which stimulates the secretion by the
CC endometrium of the nutrients required for the growth of the
CC conceptus. In summary, displays particularly high antiviral and
CC antiproliferative potency concurrently with particular weak
CC cytotoxicity, high antiluteolytic activity and immunomodulatory
CC properties. In contrast with other IFNs, IFN-tau is not virally
CC inducible.
CC -I- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
CC -I- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
CC the mononuclear cells of the extra-embryonic trophoblast.
CC -I- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
CC sheep conceptus between days 13 and 21 of pregnancy.
CC -I- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
CC IFN-omega genes in the ruminantia suborder and have continued to
CC duplicate independently in different lineages of the ruminantia.
CC They encode for proteins very similar in sequence but with
CC different biological potency and pattern of expression.
CC -I- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
CC alpha subfamily.
CC -----
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CC or send an email to license@sib-sib.ch).
CC -----
CC EMBL; M88773; AAA31503.1; -.
CC PIR; I47066; I47066.
CC HSP; P56828; IBSL.
CC InterPro; IPR009079; 4_helix_cytokine.
CC InterPro; IPR000471; Interferon_abd.
CC Pfam; PF00143; Interferon; 1.
CC PRINTS; PR00266; INTERFERONAB.
CC PRODOM; PD000550; Interferon_abd; 1.
CC PROSITE; PS00252; INTERFERON_A_B_D; 1.
CC Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
FT SIGNAL 1 23 By similarity.
FT CHAIN 24 195 Interferon tau-9.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
SQ SEQUENCE 195 AA; 22127 MW; 00DE9CB089D98493 CRC64;

Query Match 96.1%; Score 872; DB 1; Length 195;
Best Local Similarity 95.9%; Pred. No. 1.6e-72;
Matches 165; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

QY 1 CYLSERMLDARENKLLDRMNLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
DB 24 CYLSERMLDARENKLLDRMNLSPHSCLQDRKDFGLPQEMVEGDQLQKQAFPLVYEM 83
QY 61 LQOSFNLFYTHSSAAWDTTLLQLCTGLQQLDHLDTCRGQVMGEDESELGNMDDPIVTV 120
DB 84 LQOSFNLFYTHSSAAWDTTLLQLCTGLQQLDHLDTCRGQVMGEDESELGNMDDPIVTV 143
QY 121 KKYFGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
DB 144 KKYFGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 195
```


RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-ubiquitous expression, structure-function relationships, a pregnancy hormonal embryonic signal and cross-species therapeutic

RT potentialities.";

RL Biochimie 80:755-777(1998).

CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal

CC recognition of pregnancy. Interacts with endometrial receptors,

CC probably type I interferon receptors, and blocks estrogen receptor

CC expression, preventing the estrogen-induced increase in oxytocin

CC receptor expression in the endometrium. This results in the

CC suppression of the pulsatile endometrial release of the luteolytic

CC hormone prostaglandin P2-alpha, hindering the regression of the

CC corpus luteum (luteolysis) and therefore a return to ovarian

CC cyclicity. This, and a possible direct effect of IFN-tau on

CC prostaglandin synthesis, leads in turn to continued ovarian

CC progesterone secretion, which stimulates the secretion by the

CC endometrium of the nutrients required for the growth of the

CC conceptus. In summary, displays particularly high antiviral and

CC antiproliferative potency concurrently with particular weak

CC cytotoxicity, high antiluteolytic activity and immunomodulatory

CC properties. In contrast with other IFNs, IFN-tau is not virally

CC inducible.

CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in

CC the mononuclear cells of the extra-embryonic trophoblast.

CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the

CC sheep conceptus between days 13 and 21 of pregnancy.

CC -!- POLYMORPHISM: There seems to be four variants of IFN-tau 6:

CC A/P6V3, B/P6V2, C/P6V1 and D/P6/P12 (shown here).

CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from

CC IFN-omega genes in the ruminantia suborder and have continued to

CC duplicate independently in different lineages of the ruminantia.

CC They encode for proteins very similar in sequence but with

CC different biological potency and pattern of expression.

CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-

CC alpha1 subfamily.

CC -----

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CC between the Swiss Institute of Bioinformatics and the EMBL outstation -

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CC or send an email to license@isb-sib.ch).

CC -----

DR EMBL; X56343; CA39783.1; -.

DR EMBL; X56346; CA39786.1; -.

DR EMBL; AF158823; AAD44975.1; -.

DR EMBL; AF158822; AAD44974.1; -.

DR EMBL; AF158821; AAD44973.1; -.

DR PIR; A61455; A61455.

DR HSP; P56828; IBSL.

DR InterPro; IPR009079; 4 helix cytokine.

DR InterPro; IPR000471; Interferon_abd.

DR Pfam; PF00143; Interferon; 1.

DR PRINTS; PR00266; INTERFERONAB.

DR ProDom; PD000550; Interferon_abd; 1.

DR PROSITE; PS00252; INTERFERON_A_B_D; 1.

DR Antiviral; Cytokine; Glycoprotein; Hormone; Multigene family;

CC Polymorphism; Pregnancy; Signal.

FT SIGNAL 1 23 By similarity.

FT CHAIN 24 195 Interferon tau-6.

FT DISULFID 24 122 By similarity.

FT DISULFID 52 162 By similarity.

FT CARBOHYD 101 101 N-linked (GlcNAc...) (Potential).

FT VARIANT 130 130 K -> E (in IFN-tau6A and IFN-tau6B).

FT VARIANT 136 136 K -> N (in IFN-tau6A, IFN-tau6B and IFN-tau6C).

FT VARIANT 188 188 T -> M (in IFN-tau6A).

FT SEQUENCE 195 AA; 22102 MW; C8428392E78CA387 CRC64;

Query Match 92.0%; Score 834; DB 1; Length 195;

Best Local Similarity 91.9%; Pred. No. 5.1e-69;

Matches 158; Conservative 7; Mismatches 7; Indels 0; Gaps 0;

Qy 1 CYLSERMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

Db 24 CYLSERMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 83

Qy 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNMGDESELGNDPIVTV 120

Db 84 LQSFNLFYTEHSSAAWNTTLLLEQLCTGLQOQLDHLDTCRGVNMGDESELGNDPIVTV 143

Qy 121 KKYFGQIYDYLQEKGYSDCAWEIVRVMRALTVSTTLQKELTKMGGDLNSP 172

Db 144 KKYFGQIHVDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKGGDLNSP 195

RESULT 11

Q6UZ49 PRELIMINARY; PRT; 195 AA.

AC Q6UZ49;

DT 05-JUL-2004 (TrEMBLrel. 27, Created)

DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)

DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)

DE Interferon-tau 3.

OS Capra hircus (Goat).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

OC Caprinae; Capra.

OX NCBI_TaxID=9925;

RN [1]

RP SEQUENCE FROM N.A.

RA Ealy A.D., Wagner S.K., Sheils A.E., Whitley N.C., Kiesling D.O.,

RB Barbato G.F.;

RL Submitted (JUL-2003) to the EMBL/GenBank/DBJ databases.

CC -!- SIMILARITY: Belongs to the alpha/beta interferon family.

DR EMBL; AY357329; AAQ56198.1; -.

DR HSP; P56828; IBSL.

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. .); IEA.

DR GO; GO:0006952; P:defense response; IEA.

DR InterPro; IPR009079; 4 helix cytokine.

DR InterPro; IPR000471; Interferon_abd.

DR Pfam; PF00143; Interferon; 1.

DR PRINTS; PR00266; INTERFERONAB.

DR ProDom; PD000550; Interferon_abd; 1.

DR SMART; SM00076; IFabd; 1.

DR PROSITE; PS00252; INTERFERON_A_B_D; 1.

DR Antiviral; Cytokine.

Qy SEQUENCE 195 AA; 22294 MW; 323B782D1D16E69E CRC64;

Query Match 91.3%; Score 828; DB 2; Length 195;

Best Local Similarity 92.4%; Pred. No. 1.8e-68;

Matches 159; Conservative 5; Mismatches 8; Indels 0; Gaps 0;

Qy 1 CYLSERMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60

Db 24 CYLSRRLMDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 83

Qy 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGVNMGDESELGNDPIVTV 120

Db 84 LQSFNLFYTEHSSAAWNTTLLLEQLCTGLQOQLDHLDTCRGVNMGDESELGNDPIVTV 143

Qy 121 KKYFGQIYDYLQEKGYSDCAWEIVRVMRALTVSTTLQKELTKMGGDLNSP 172

Db 144 KKYFGQIHVDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKGGDLNSP 195

RESULT 12

Q6UZ50 PRELIMINARY; PRT; 195 AA.

AC Q6UZ50;

DT 05-JUL-2004 (TrEMBLrel. 27, Created)

DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)

DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)

DE Interferon-tau 2b (interferon-tau 2a).

OS Capra hircus (Goat).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Capra.
 OX NCBI_TaxID=9925;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Ealy A.D., Wagner S.K., Shells A.E., Whitley N.C., Kiesling D.O.,
 RA Barabato G.F.;
 RL Submitted (JUL-2003) to the EMBL/GenBank/DBJ databases.
 CC -1- SIMILARITY: Belongs to the alpha/beta interferon family.
 DR EMBL; AY357328; AAQ56197.1; -;
 DR EMBL; AY357327; AAQ56196.1; -;
 DR HSSP; P56828; 1B5L;
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
 DR GO; GO:0006952; P:defense response; IEA.
 DR InterPro; IPR009079; 4 helix cytokine.
 DR InterPro; IPR000471; Interferon_abd.
 DR Pfam; PF00143; Interferon; 1.
 DR PRINTS; PR00266; INTERFERONAB.
 DR ProDom; PD000550; Interferon_abd; 1.
 DR SMART; SM00076; IFabd; 1.
 DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine.
 SQ SEQUENCE 195 AA; 22313 MW; C99AC236A716F654 CRC64;
 Query Match 91.3%; Score 828; DB 2; Length 195;
 Best Local Similarity 92.4%; Pred. No. 1.8e-68;
 Matches 159; Conservative 5; Mismatches 8; Indels 0; Gaps 0;
 QY 1 CYLSERMLDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAFVLYEM 60
 DB 24 CYLSRRLMLDARENLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAFVLYEM 83
 QY 61 LQOSNLFYTEHSSAAWDTTLLSQCTGLQOQLDHLDTCRGQVWGSEDSGLNMDPIVTV 120
 DB 84 LQOTFNLFYTEHSSAAWDTTLLSQRLTGLQOQLDHLDTCRGQVWGSEDSGLNMDPIVTV 143
 QY 121 KKYFQGIYDLOEKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKMGDDLNSP 172
 DB 144 KKYFQGIHDLQEKYSDCAWEIVRVMEMRALTSSTTLQKRLTKMGDDLNSP 195
 RESULT 13
 Q6RFZ8 PRELIMINARY; PRT; 172 AA.
 ID Q6RFZ8
 AC Q6RFZ8;
 DT 05-JUL-2004 (T-EMBLrel. 27, Created)
 DT 05-JUL-2004 (T-EMBLrel. 27, Last sequence update)
 DE Interferon tau (Fragment).
 OS Ovis aries (Sheep).
 OC Mammalia; Eutheria; Chordata; Vertebrata; Euteleostomi;
 OC Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Wang X., Wang M., Xia C., Zhu D., Liou C., Bai Y.;
 RL Submitted (DEC-2003) to the EMBL/GenBank/DBJ databases.
 CC -1- SIMILARITY: Belongs to the alpha/beta interferon family.
 DR EMBL; AY499657; AAR85992.1; -;
 DR HSSP; P56828; 1B5L;
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
 DR GO; GO:0006952; P:defense response; IEA.
 DR InterPro; IPR009079; 4 helix cytokine.
 DR InterPro; IPR000471; Interferon_abd.
 DR Pfam; PF00143; Interferon; 1.
 DR PRINTS; PR00266; INTERFERONAB.
 DR ProDom; PD000550; Interferon_abd; 1.
 DR SMART; SM00076; IFabd; 1.
 DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine.

FT NON TER 1 1
 SQ SEQUENCE 172 AA; 19992 MW; 65984B2F91335046 CRC64;
 Query Match 90.4%; Score 820; DB 2; Length 172;
 Best Local Similarity 91.9%; Pred. No. 8.6e-68;
 Matches 158; Conservative 6; Mismatches 8; Indels 0; Gaps 0;
 QY 1 CYLSERMLDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAFVLYEM 60
 DB 1 CYLSRRLMLDARENLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDLQKQAFVLYEM 60
 QY 61 LQOSNLFYTEHSSAAWDTTLLSQCTGLQOQLDHLDTCRGQVWGSEDSGLNMDPIVTV 120
 DB 61 LQOTFNLFYTEHSSAAWDTTLLSQRLTGLQOQLDHLDTCRGQVWGSEDSGLNMDPIVTV 120
 QY 121 KKYFQGIYDLOEKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKMGDDLNSP 172
 DB 121 KKYFQGIHDLQEKYSDCAWEIVRVMEMRALTSSTTLQKRLTKMGDDLNSP 172
 RESULT 14
 INTA SHEEP
 ID INTA SHEEP STANDARD; PRT; 195 AA.
 AC Q08053;
 DT 30-MAY-2000 (Rel. 39, Created)
 DT 30-MAY-2000 (Rel. 39, Last sequence update)
 DT 05-JUL-2004 (Rel. 44, Last annotation update)
 DE Interferon tau-10 precursor (IFN-tau10) (Trophoblast protein-1) (TP-1)
 DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein)
 DE (TP-02).
 GN Name=IFNT10;
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Trophectoderm;
 RX MEDLINE=93250155; PubMed=8485241;
 RA Nephew K.P., Whaley A.E., Christenson R.K., Imakawa K.;
 RT "Differential expression of distinct mRNAs for ovine trophoblast
 protein-1 and related sheep type I interferons.";
 RL Biol. Reprod. 48:768-778(1993).
 RN [2]
 RP FUNCTION.
 RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
 RA Spencer T.E., Bazer F.W.;
 RT "Ovine interferon tau suppresses transcription of the estrogen
 receptor and oxytocin receptor genes in the ovine endometrium.";
 RL Endocrinology 137:1144-1147(1996).
 RN [3]
 RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
 RX MEDLINE=95062134; PubMed=7971949;
 RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
 RA Krishna N.R., Pontzer C.H.;
 RT "Predicted structural motif of IFN tau.";
 RL Protein Eng. 7:863-867(1994).
 RN [4]
 RP 3D-STRUCTURE MODELING.
 RX MEDLINE=96318252; PubMed=8746786;
 RA Senda T., Saitoh S.-I., Mitau Y., Li J., Roberts R.M.;
 RT "A three-dimensional model of interferon-tau.";
 RL J. Interferon Cytokine Res. 15:1053-1060(1995).
 RN [5]
 RP REVIEW.
 RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
 RA Martal J.L., Chene N.M., Huynh L.P., L'Haron R.M., Reinaud P.B.,
 RA Guillomot M.W., Charlier M.A., Charpigny S.Y.;
 RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
 ubiquitous expression, structure-function relationships, a pregnancy
 hormonal embryonic signal and cross-species therapeutic
 potentialities.";

RL Biochimie 80:755-777(1998).
 CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal
 CC recognition of pregnancy. Interacts with endometrial receptors,
 CC probably type I interferon receptors, and blocks estrogen receptor
 CC expression, preventing the estrogen-induced increase in oxytocin
 CC receptor expression in the endometrium. This results in the
 CC suppression of the pulsatile endometrial release of the luteolytic
 CC hormone prostaglandin F2-alpha, hindering the regression of the
 CC corpus luteum (luteolysis) and therefore a return to ovarian
 CC cyclicity. This, and a possible direct effect of IFN-tau on
 CC prostaglandin synthesis, leads in turn to continued ovarian
 CC progesterone secretion, which stimulates the secretion by the
 CC endometrium of the nutrients required for the growth of the
 CC conceptus. In summary, displays particularly high antiviral and
 CC antiproliferative potency concurrently with particular weak
 CC cytotoxicity, high antiluteolytic activity and immunomodulatory
 CC properties. In contrast with other IFNs, IFN-tau is not virally
 CC inducible.
 CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
 CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
 CC the mononuclear cells of the extra-embryonic trophoctoderm.
 CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
 CC sheep conceptus between days 13 and 21 of pregnancy.
 CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
 CC IFN-omega genes in the ruminantia suborder and have continued to
 CC duplicate independently in different lineages of the ruminantia.
 CC They encode for proteins very similar in sequence but with
 CC different biological potency and pattern of expression.
 CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
 CC alpha1 subfamily.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
 CC the European Bioinformatics Institute. There are no restrictions on its
 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
 CC or send an email to license@sib-sib.ch).
 CC -----
 DR EMBL; M88770; AA311504.1; -.
 DR PIR; I47067; I47067.
 DR HSP; P56828; IBSL.
 DR InterPro; IPR000979; 4 helix cytokine.
 DR InterPro; IPR000471; Interferon_abd.
 DR Pfam; PF00143; Interferon; 1
 DR PRINTS; PR00286; INTERFERONAB.
 DR ProDom; PD000550; Interferon_abd; 1.
 DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine; Glycoprotein; Hormone; Multigene family;
 KW Pregnancy; Signal.
 FT SIGNAL 1 23 By similarity.
 FT CHAIN 24 195 Interferon tau-10.
 FT DISULFID 24 122 By similarity.
 FT DISULFID 52 162 By similarity.
 FT CARBOHYD 101 101 N-linked (GlcNAc...) (Potential).
 SQ SEQUENCE 195 AA; 22069 MW; 16084C3184AC3963 CRC64;

Query Match 89.3%; Score 810; DB 1; Length 195;
 Best Local Similarity 90.1%; Pred. No. 8.4e-67;
 Matches 155; Conservative 8; Mismatches 9; Indels 0; Gaps 0;
 QY 1 CYLSERLMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 60
 DB 24 CYLSRLMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 83
 QY 61 LQQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 DB 84 LQQSFNLFHTERSAAWNTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 143
 QY 121 KKYFGIYDYLOEKGYSDCAWEIVRVEMMRALTTSVTTLOKRLTKMGDLNSP 172
 DB 144 KKYFGIYDYLOEKGYSDCAWEIVRVEMMRALTTSVTTLOKRLTKMGDLNSP 195

RESULT 15
 Q6UZ47 PRELIMINARY; PRT; 195 AA.
 AC Q6UZ47;
 DT 05-JUL-2004 (TrEMBLrel. 27, Created)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
 DE Interferon-tau 4b (Interferon-tau 4c) (Interferon-tau 4d) (Interferon-
 DE tau 4e) (Interferon-tau 4a).
 OS Capra hircus (Goat).
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 CC Caprinae; Capra.
 CC NCBI_TaxID=9925;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Ealy A.D., Wagner S.K., Sheils A.E., Whitley N.C., Kiesling D.O.,
 RA Barbato G.F.;
 RL Submitted (JUL-2003) to the EMBL/GenBank/DBJ databases.
 CC -!- SIMILARITY: Belongs to the alpha/beta interferon family.
 DR EMBL; AY357331; AAQ56280.1; -.
 DR EMBL; AY357332; AAQ56201.1; -.
 DR EMBL; AY357333; AAQ56202.1; -.
 DR EMBL; AY357334; AAQ56203.1; -.
 DR EMBL; AY357330; AAQ56199.1; -.
 DR HSP; P56828; IBSL.
 DR GO; GO:0005576; C:extracellular; IEA.
 DR GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. .; IEA.
 DR GO; GO:0006952; P:defense response; IEA.
 DR InterPro; IPR000979; 4 helix cytokine.
 DR InterPro; IPR000471; Interferon_abd.
 DR Pfam; PF00143; Interferon; 1
 DR PRINTS; PR00286; INTERFERONAB.
 DR ProDom; PD000550; Interferon_abd; 1.
 DR SMART; SM00076; IFabd; 1.
 DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine.
 SQ SEQUENCE 195 AA; 22354 MW; D364AC9A972D8FC4 CRC64;
 Query Match 88.4%; Score 802; DB 2; Length 195;
 Best Local Similarity 90.1%; Pred. No. 4.6e-66;
 Matches 155; Conservative 7; Mismatches 10; Indels 0; Gaps 0;
 QY 1 CYLSERLMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 60
 DB 24 CYLSRLMLDARENILKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFSVLYEM 83
 QY 61 LQQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 DB 84 LQQSFNLFHTERSAAWNTTLLLEQLHTGLQQLDHLDTCRGLVMGEKDSLGKMDPIVTV 143
 QY 121 KKYFGIYDYLOEKGYSDCAWEIVRVEMMRALTTSVTTLOKRLTKMGDLNSP 172
 DB 144 KKYFGIYDYLOEKGYSDCAWEIVRVEMMRALTTSVTTLOKRLTKMGDLNSP 195

Search completed: October 28, 2005, 14:59:57
 Job time : 115.5 secs

;
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: OviNFtau protein
US-08-438-753B-2

Query Match	99.1%;	Score 899;	DB 1;	Length 172;
Best Local Similarity	98.8%;	Pred. No. 1.6e-98;		
Matches 170; Conservative	1;	Mismatches 1;	Indels 0;	Gaps 0;

1	CYLSERIMLDARENILKLDNRNRUSPHSCITQDRKDFGLPOEMVEGQOLQKDAQFPVLVEM	60
QY	:	
1	CYLSERIMLDARENILKLDNRNRUSPHSCITQDRKDFGLPOEMVEGQOLQKDAQFPVLVEM	60
Db	:	
61	LOOSFNLFYTHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPVTV	120
QY	:	
61	LOOSFNLFYTHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPVTV	120
Db	:	

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RESULT 2
US-08-443-883A-2
; Sequence 2, Application US/08443883A
; Patent No. 5738845
; GENERAL INFORMATION:
; APPLICANT: Bazer, Fuller W.
; APPLICANT: Johnson, Howard M.
; APPLICANT: Pontzer, Carol H.
; APPLICANT: Ott, Troy L.
; APPLICANT: Van Heeke, Gino
; APPLICANT: Imakawa, Kazuhito
; TITLE OF INVENTION: Interferon Tau Compositions and
; TITLE OF INVENTION: Methods of Use
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSES: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306

```

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; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: OviFntau protein
US-08-443-883A-2

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	Query Match	99.1%	Score 899;	DB 1;	Length 172;
	Best Local Similarity	98.8%;	Pred. No. 1.6e-98;		
	Matches 170;	Conservative 1;	Mismatches 1;	Indels 0;	Gaps 0
Qy	1	CYLSERLMLDARENKLLDRNNRLSPHCSLQDRKDFGLPOEMVFGDQLQKDOAPFVLYEM	60		
Db	1	CYLSERLMLDARENKLLDRNNRLSPHCSLQDRKDFGLPOEMVFGDQLQKDOAPFVLYEM	60		
Qy	61	LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQOQLDLHLDTCRQVWGEEDSELGNMDPIVTV	120		
Db	61	LQOSFNLFYTEHSSAAWDTTLLEQLCTGLQOQLDLHLDTCRQVWGEEDSELGNMDPIVTV	120		
Qy	121	KKYFQGIYDYLOKGYSDCAWEIVRVEMMRALTVSTTLQKRLTKWGGDLNSP	172		
Db	121	KKYFQGIYDYLOKGYSDCAWEIVRVEMMRALTVSTTLQKRLTKWGGDLNSP	172		

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1  RESULT 3
2  US-08-631-328-2
3  ; Sequence 2, Application US/08631328
4  ; Patent No. 5939286
5  ; GENERAL INFORMATION:
6  ; APPLICANT: Johnson, Howard M.
7  ; APPLICANT: Pontzer, Carol H.
8  ; APPLICANT: Subramaniam, Prem S.
9  ; TITLE OF INVENTION: Hybrid Interferon Compositions and
10 ; TITLE OF INVENTION: Methods of Use
11 ; NUMBER OF SEQUENCES: 55
12 ; CORRESPONDENCE ADDRESS:
13 ; ADDRESSER: Dehlinger & Associates
14 ; STREET: 350 Cambridge Ave., Suite 250
15 ; CITY: Palo Alto
16 ; STATE: CA
17 ; COUNTRY: USA
18 ; ZIP: 94306
19 ; COMPUTER READABLE FORM:
20 ; MEDIUM TYPE: Floppy disk
21 ; OPERATING SYSTEM: PC-DOS/MS-DOS
22 ; SOFTWARE: PatentIn Release #1.0, Version #1.25
23 ; CURRENT APPLICATION DATA:
24 ; APPLICATION NUMBER: US/08/631.328
25 ; FILING DATE: 12-APR-1996
26 ; CLASSIFICATION: 435
27 ; PRIOR APPLICATION DATA:
28 ; APPLICATION NUMBER: US 08/438,753
29 ; FILING DATE: 10-MAY-1995
30 ; ATTORNEY/AGENT INFORMATION:
31 ; NAME: Sholtz, Charles K.
32 ; REGISTRATION NUMBER: 38,615
33 ; REFERENCE/DOCKET NUMBER: 5600-0001.34
34 ; TELECOMMUNICATION INFORMATION:
35 ; TELEPHONE: 415-324-0880
36 ; TELEFAX: 415-324-0960
37 ; INFORMATION FOR SEQ ID NO: 2:
38 ; SEQUENCE CHARACTERISTICS:
39 ; LENGTH: 172 amino acids
40 ; TYPE: amino acid
41 ; TOPOLOGY: linear
42 ; MOLECULE TYPE: protein
43 ; ORIGINAL SOURCE:
44 ; INDIVIDUAL ISOLATE: amino acid sequence of a mature
45 ; INDIVIDUAL ISOLATE: Ovipntau protein
46 ; US-08-631-328-2

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; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: Ovintau protein
US-08-455-021B-2

Query Match 99.1%; Score 899; DB 2; Length 172;
Best Local Similarity 98.8%; Pred. No. 1.6e-98;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 CYLSERMLDARENKLLDRNRLSPHSCLOQRKDFGLPQEMVEGDQLOKQAFPLVYEM 60
DB 1 CYLSRKMLDARENKLLDRNRLSPHSCLOQRKDFGLPQEMVEGDQLOKQAFPLVYEM 60
QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGVMGEEDSELGNMDPIVTV 120
DB 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGVMGEEDSELGNMDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSCAMEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172
DB 121 KKYFGIYDYLQEKGYSCAMEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172

RESULT 6
US-09-045-467-2
; Sequence 2, Application US/09045467
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; Pontzer, Carol H.
; TITLE OF INVENTION: Interferon Tau Compositions and
; METHODS OF USE
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/045,467
; FILING DATE: 20-Mar-1998
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/455,021
; FILING DATE: 31-MAY-1995
; APPLICATION NUMBER: US 08/438,753
; FILING DATE: 10-MAY-1995
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 09-MAR-1992
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Dehlinger, Peter J.
; REGISTRATION NUMBER: 28,006
; REFERENCE/DOCKET NUMBER: 5600-0001.36
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:

; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: Ovintau protein
US-09-045-467-2

Query Match 99.1%; Score 899; DB 3; Length 172;
Best Local Similarity 98.8%; Pred. No. 1.6e-98;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 CYLSERMLDARENKLLDRNRLSPHSCLOQRKDFGLPQEMVEGDQLOKQAFPLVYEM 60
DB 1 CYLSRKMLDARENKLLDRNRLSPHSCLOQRKDFGLPQEMVEGDQLOKQAFPLVYEM 60
QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGVMGEEDSELGNMDPIVTV 120
DB 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGVMGEEDSELGNMDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSCAMEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172
DB 121 KKYFGIYDYLQEKGYSCAMEIVRVMRALTTSVTTLQKRLTKMGDLNSP 172

RESULT 7
US-08-954-395A-18
; Sequence 18, Application US/08954395A
; Patent No. 6204022
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; APPLICANT: Subramaniam, Prem S.
; APPLICANT: Pontzer, Carol H.
; APPLICANT: Villarete, Lorelie H.
; APPLICANT: Campos, Jackeline
; APPLICANT: Chung, Albert D.
; APPLICANT: Li, Wayne W.
; APPLICANT: Liu, Philip T.
; TITLE OF INVENTION: LOW-TOXICITY HUMAN INTERFERON-ALPHA
; NUMBER OF SEQUENCES: 35
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates LLP
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/954,395A
; FILING DATE: Filed Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/631,328
; FILING DATE: 12-APR-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Dehlinger, Peter J.
; REGISTRATION NUMBER: 27008
; REFERENCE/DOCKET NUMBER: 5600-0001.35
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
; TELEX:
; INFORMATION FOR SEQ ID NO: 18:
; SEQUENCE CHARACTERISTICS:

/ LENGTH: 172 amino acids
/ TYPE: amino acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ IMMEDIATE SOURCE:
/ LIBRARY: GenBank Accessn. Y00287, PID g1358
/ CLONE: Ovine IFN-tau, mature protein
US-08-954-395A-18

Query Match
Best Local Similarity 99.1%; Score 899; DB 3; Length 172;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSERMLDARENKLLDRMRLSPHSCLODRKDFGLPQEMVEGQLOKQDQAFPLVYEM 60
Db 1 CYLSRKLMLDARENKLLDRMRLSPHSCLODRKDFGLPQEMVEGQLOKQDQAFPLVYEM 60

QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120
Db 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172

RESULT 8
US-08-616-904-2
; Sequence 2, Application US/08616904
; Patent No. 6372206
; GENERAL INFORMATION:
; APPLICANT: Soos, Jeanne M.
; APPLICANT: Schiffenbauer, Joel
; APPLICANT: Johnson, Howard M.
; TITLE OF INVENTION: Orally-Administered Interferon-Tau
; TITLE OF INVENTION: Compositions and Methods
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/616,904
; FILING DATE: 15-MAR-1996
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Sholtz, Charles K.
; REGISTRATION NUMBER: 38,615
; REFERENCE/DOCKET NUMBER: 5600-0003
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-324-0880
; TELEFAX: 415-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: OvIFNtau protein
US-08-616-904-2

Query Match 99.1%; Score 899; DB 3; Length 172;

Best Local Similarity 98.8%; Pred. No. 1.6e-98;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSERMLDARENKLLDRMRLSPHSCLODRKDFGLPQEMVEGQLOKQDQAFPLVYEM 60
Db 1 CYLSRKLMLDARENKLLDRMRLSPHSCLODRKDFGLPQEMVEGQLOKQDQAFPLVYEM 60

QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120
Db 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172

RESULT 9
US-09-599-413-18
; Sequence 18, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H.
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; PRIOR FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 18
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-18

Query Match 98.6%; Score 894; DB 4; Length 172;
Best Local Similarity 98.3%; Pred. No. 6.2e-98;
Matches 169; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSERMLDARENKLLDRMRLSPHSCLODRKDFGLPQEMVEGQLOKQDQAFPLVYEM 60
Db 1 CYLSQKMLDARENKLLDRMRLSPHSCLODRKDFGLPQEMVEGQLOKQDQAFPLVYEM 60

QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120
Db 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDFIVTV 120

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALT VSTTLQKRLTKMGDDLNSP 172

RESULT 10
US-09-599-413-2
; Sequence 2, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H.
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-2

US-09-599-413-20

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Query Match          97.9%; Score 888; DB 4; Length 172;
Best Local Similarity 97.7%; Pred. No. 3.2e-97;
Matches 168; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 CYLSERLMLDARENKLLDRMNRSLPHSCLDQRKDFGLPQEMVEGDLQKQDAFPVLYEM 60
   ||| :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 1 CYLSRKLMLDARENKLLDQMNRSLPHSCLDQRKDFGLPQEMVEGDLQKQDAFPVLYEM 60

QY 61 LQOSFNLFTYEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
   ||| :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 61 LQOSFNLFTYEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

QY 121 KKYFQGIYDYLQEKGYSDCAWEIVRVMRALTIVSTTLQKRLTKMGDDLNSP 172
   ||| :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 121 KKYFQGIYDYLQEKGYSDCAWEIVRVMRALTIVSTTLQKRLTKMGDDLNSP 172
```

RESULT 15

```
US-09-599-413-4
; Sequence 4, Application US/09599413
; Patent No. 6833256
; GENERAL INFORMATION:
; APPLICANT: Pontzer, Carol H
; TITLE OF INVENTION: Interferon Tau Mutants and Methods for Making Them
; FILE REFERENCE: interferon tau
; CURRENT APPLICATION NUMBER: US/09/599,413
; CURRENT FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/140,411
; PRIOR FILING DATE: 1999-06-22
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 172
; TYPE: PRT
; ORGANISM: ovine
US-09-599-413-4
```

```
Query Match          97.8%; Score 887; DB 4; Length 172;
Best Local Similarity 97.7%; Pred. No. 4.2e-97;
Matches 168; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 CYLSERLMLDARENKLLDRMNRSLPHSCLDQRKDFGLPQEMVEGDLQKQDAFPVLYEM 60
   ||| :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLDQRKDFGLPQEMVEGDLQKQDAFPVLYEM 60

QY 61 LQOSFNLFTYEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
   ||| :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 61 LQOSFNLFTYEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

QY 121 KKYFQGIYDYLQEKGYSDCAWEIVRVMRALTIVSTTLQKRLTKMGDDLNSP 172
   ||| :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 121 KKYFQGIYDYLQEKGYSDCAWEIVRVMRALTIVSTTLQKRLTKMGDDLNSP 172
```

Search completed: October 28, 2005, 15:01:48
Job time : 25.5 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:48:06 ; Search time 121 Seconds
(without alignments)
549.775 Million cell updates/sec

Title: US-10-719-472-2

Perfect score: 907

Sequence: 1 CYLSKMLDARENKLLDR.....TVSTTLQKRLTKMGDLNSP 172

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_16Dec04:*
1: Geneseqp1980s:*
2: Geneseqp1990s:*
3: Geneseqp2000s:*
4: Geneseqp2001s:*
5: Geneseqp2002s:*
6: Geneseqp2003as:*
7: Geneseqp2003bs:*
8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	907	100.0	172	2	AAR54768 Sheep int
2	907	100.0	172	2	AAR99397 Ovine tau
3	907	100.0	172	2	AAR31698 Mature ov
4	907	100.0	172	2	AAR44110 Mature ov
5	907	100.0	172	5	ABO7588 Ovine int
6	907	100.0	172	7	AD117857 Mature ov
7	907	100.0	172	8	ADM79177 Mature ov
8	907	100.0	172	8	ADSI3613 Sheep int
9	907	100.0	195	2	AAR04540 Ovine tro
10	905	99.8	172	2	AAR09294 Ovine tro
11	905	99.8	172	8	ADM79195 Interfero
12	904	99.7	195	2	AAR24942 Sequence
13	900	99.2	172	4	AAB31457 Amino aci
14	900	99.2	172	5	AAB021461 Ovine int
15	899	99.1	172	5	ABO7589 Recombina
16	899	99.1	172	8	ADM79178 Mature ov
17	899	99.1	172	8	ADSI3614 Recombina
18	898	99.0	172	4	AAB31462 An ovine
19	897	98.9	195	2	AAR24941 Sequence
20	897	98.9	195	2	AAR24945 Sequence
21	896	98.8	172	4	AAB31468 An ovine
22	896	98.8	172	4	AAB31466 An ovine
23	896	98.8	172	4	AAB31464 An ovine
24	895	98.7	172	4	AAB31459 An ovine
25	894	98.6	172	4	AAB31467 An ovine

26	894	98.6	172	4	AAB31465 An ovine
27	894	98.6	172	4	AAB31460 An ovine
28	894	98.6	195	2	AAR24944 Sequence
29	892	98.3	172	4	AAB31461 An ovine
30	890	98.1	172	4	AAB31463 An ovine
31	883	97.4	195	1	AAP91396 Isoform o
32	874	96.4	195	2	AAR24943 Sequence
33	857.5	94.5	196	4	AAB49784 Ovi TP-1
34	857.5	94.5	196	7	ADF94976 Sheep IFN
35	786	86.7	152	8	ADSI16363 Human int
36	723	79.7	195	4	AAB49783 Bovine TP
37	723	79.7	195	5	ABO8641 Bovine in
38	723	79.7	195	7	ADF94975 Bovine IF
39	720	79.4	195	2	AAR04539 cDNA clon
40	691	76.2	173	2	AAR70809 A tau mod
41	649	71.6	171	7	ADG42697 Human int
42	649	71.6	171	7	ADJ55766 Peptide h
43	649	71.6	171	8	ADM76604 Human NOV
44	647	71.3	173	2	AAR70808 A tau mod
45	632	69.7	173	2	AAR56435 Amino aci

ALIGNMENTS

RESULT 1
AAR54768
ID AAR54768 standard; protein; 172 AA.
XX
AC AAR54768;
XX
DT 25-MAR-2003 (revised)
DT 01-DEC-1994 (first entry)
XX
DE Sheep interferon-tau mature protein.
XX
KW Sheep; interferon-tau; immunostimulant; antitumor; virucide.
XX
OS Ovis aries.
XX
PN WO9410313-A2.
XX
PD 11-MAY-1994.
XX
PF 19-OCT-1993; 93WO-US010016.
XX
PR 30-OCT-1992; 92US-00969890.
XX
PA (UYFL) UNIV FLORIDA.
XX (WOMEN-) WOMEN'S RES INST.
XX
Bazer FW, Johnson HM, Pontzer CH, Ott TL, Van Heeke G, Imakawa K;
WPI: 1994-167468/20.
DR N-PSDB; AAQ64824.
XX
Interferon tau compens - lacking cytotoxic side effects when used as antivirals, and anti-cellular proliferation agents.
XX
Claim 3; Page 90; 136pp; English.
XX
This sheep IFN-tau protein is expressed in yeast, insect cells or E. coli using expression vector phage lambda-gt11. The protein is useful for inhibiting tumor cell growth, for inhibiting viral replication in cells and enhancing fertility in female mammals. (Updated on 25-MAR-2003 to correct PN field.)
XX
SQ Sequence 172 AA;
Query Match 100.0%; Score 907; DB 2; Length 172;
Best Local Similarity 100.0%; Pred. No. 1e-92;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVSGDOLQKQOAFPVLYEM 60
 Db 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVSGDOLQKQOAFPVLYEM 60
 QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 Db 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDGLNSP 172
 Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDGLNSP 172

RESULT 2

AAR99397
 ID AAR99397 standard; protein; 172 AA.

XX AC AAR99397;
 XX 29-DEC-1996 (first entry)
 XX DE Ovine tau interferon (synthetic).
 XX Tau interferon; ovine; bovine; autoimmune disease;
 KW proliferative disorder; viral disease; fertility.
 XX OS Synthetic.
 XX PN WO9628183-A1.
 XX 19-SEP-1996.
 XX PF 15-MAR-1996; 96WO-US003472.
 XX PR 16-MAR-1995; 95US-00406190.
 XX PA (UYFL) UNIV FLORIDA.

XX PI Soos JM, Schiffenbauer J, Johnson HM;
 XX WPI; 1996-464609/46.
 DR N-PSDB; AAT41504.
 XX Tau interferon-contg. medicament - useful to treat auto-immune diseases,
 PT proliferative disorders, viral diseases or to enhance fertility in a
 PT female mammal.
 XX PS Claim 5; Page 48; 65pp; English.
 XX CC Ovine and human tau interferon may be used in medicaments to treat
 CC autoimmune disorders (e.g. multiple sclerosis or rheumatoid arthritis), a
 CC proliferative disorder (e.g. cancer) or a viral disease (e.g. hepatitis
 CC B). It can also be used to enhance fertility in female mammals. The
 CC medicament is given orally or by injection. Ovine and human tau
 CC interferon sequences are given in AAT41504 to AAT41506

XX SQ Sequence 172 AA;

Query Match 100.0%; Score 907; DB 2; Length 172;
 Best Local Similarity 100.0%; Pred. No. 1e-92;
 Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVSGDOLQKQOAFPVLYEM 60
 Db 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVSGDOLQKQOAFPVLYEM 60
 QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 Db 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDGLNSP 172
 Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDGLNSP 172

RESULT 3

AAW31698
 ID AAW31698 standard; protein; 172 AA.

XX AC AAW31698;
 XX 14-APR-1998 (first entry)
 XX DE Mature ovine interferon-tau (OvIFNtau) protein.
 XX Interferon-tau; ovine; human; auto immune disease; treatment; toxicity;
 KW IFN tau; multiple sclerosis; diabetes mellitus; asthma; allergy; cancer.

XX OS Ovis aries.
 XX PN WO9733607-A1.
 XX 18-SEP-1997.
 XX PF 12-MAR-1997; 97WO-US003794.
 XX PR 15-MAR-1996; 96US-00616904.
 XX PA (UYFL) UNIV FLORIDA.

XX PI Soos JM, Schiffenbauer J, Johnson HM;
 XX WPI; 1997-470642/43.
 DR N-PSDB; AAV02288.
 XX Oral administration of interferon-tau for treatment of auto-immune
 PT disease - avoids toxicity of interferon alpha and generates fewer
 PT specific antibodies than injection.
 XX PS Claim 5; Page 31; 48pp; English.

XX CC This is a mature ovine interferon-tau (OvIFNtau) protein. The ovine and
 CC the human interferon-tau (IFN tau) can be used in the treatment of
 CC mammalian diseases responsive to IFN tau. The new feature in the
 CC treatment is that IFN tau is administered orally. The method is used to
 CC treat immune, particularly auto-immune disease, specifically multiple
 CC sclerosis (a preferred application, reducing both severity and frequency
 CC of relapses), type I diabetes mellitus, lupus erythematosus, amyotrophic
 CC lateral sclerosis, Crohn's disease, rheumatoid arthritis, stomatitis,
 CC asthma, allergies and psoriasis, particularly in humans or dogs. IFN tau
 CC is also useful for treating cancer (e.g. hairy cell leukaemia, Kaposi's
 CC sarcoma and multiple myeloma), cell proliferation and viral diseases
 CC (hepatitis, human immunodeficiency virus etc., including prevention of
 CC maternal transmission). It is also used for increasing fertility in
 CC female mammals (increasing life time of the corpus luteum). Oral
 CC administration is as effective as injection but is more convenient and
 CC generates a lower level of anti-IFN tau antibodies. Use of IFN tau avoids
 CC the toxicity associated with use of IFN alpha

XX SQ Sequence 172 AA;

Query Match 100.0%; Score 907; DB 2; Length 172;
 Best Local Similarity 100.0%; Pred. No. 1e-92;
 Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVSGDOLQKQOAFPVLYEM 60
 Db 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVSGDOLQKQOAFPVLYEM 60
 QY 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 Db 61 LQOSFNLFTYHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
 QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDGLNSP 172
 Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDGLNSP 172

RESULT 4
AAW44110
ID AAW44110 standard; protein; 172 AA.

AC AAW44110;

XX 16-JUN-1998 (first entry)

XX Mature ovine interferon tau.

XX Hybrid; fusion; interferon-tau; inhibit; tumour; viral growth; IFNt;

XX autoimmune disease; immune response.

XX Ovis aries.

XX WO9739127-A1.

XX 23-OCT-1997.

XX 11-APR-1997; 97WO-US006114.

XX 12-APR-1996; 96US-00631328.

XX (UYFL) UNIV FLORIDA.

XX Johnson HM, Subramaniam PS, Pontzer CH;

XX WPI; 1997-526463/48.

XX N-PSDB; AAV02178.

XX Hybrid nucleic acid encodes fusion of interferon-tau and other interferon
PT - used to inhibit tumour and viral growth, and for treating auto-immune
PT disease, less toxic than native type I interferon.

PS Disclosure; Page 83; 147pp; English.

CC The present sequence represents mature ovine interferon tau from the
CC present invention. The present invention describes a novel chimeric
CC nucleic acid which comprises: (i) a 5'-segment encoding the N-terminal
CC amino acid (aa) sequence of an interferon tau (IFNt) polypeptide; and
CC (ii) a 3'-sequence encoding the C-terminal aa sequence of a non-tau type
CC I interferon, with the two segments spliced in a region comprising part
CC of the mature interferon between residues 8 and 37. Hybrid interferon
CC fusion polypeptides are used to inhibit tumour growth (e.g. of steroid-
CC sensitive tumours) and viral replication (e.g. of human immunodeficiency
CC virus, hepatitis B or C virus, feline leukaemia virus) and to treat
CC autoimmune diseases (e.g. lupus erythematosus, type I diabetes,
CC rheumatoid arthritis). Some hybrid interferon fusion polypeptides may
CC block the antiviral/antiproliferative actions of IFNt, so can be used to
CC prevent immune responses induced by interferons, e.g. in organ
CC transplantation. The hybrid interferon fusion polypeptides can also be
CC used to raise antibodies, used e.g. for analysis of structure/function
CC relationships. The novel chimeric nucleic acid is used to produce
CC recombinant hybrid interferon fusion polypeptides. Hybrid interferon
CC fusion polypeptides are less toxic than type I interferons, so can be
CC administered at higher doses

XX Sequence 172 AA;

Query Match 100.0%; Score 907; DB 2; Length 172;
Best Local Similarity 100.0%; Pred. No. 1e-92;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDQLQKQDAFPVLVEM 60

DB 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDQLQKQDAFPVLVEM 60

OY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

DB 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

OY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVSTTLQKRLTKMGDLNSP 172
DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVSTTLQKRLTKMGDLNSP 172

RESULT 5

ABB07588

ID ABB07588 standard; protein; 172 AA.

XX ABB07588;

XX 08-MAY-2002 (first entry)

XX Ovine interferon-tau protein.

XX Hepatitis C virus; HCV infection; ovine; interferon-tau; ovIFN-tau; OAS;
KW 2',5'-oligoadenylate synthetase; virucide; hepatotropic; IFN-tau.

XX Ovis aries.

XX WO200206343-A2.

XX 24-JAN-2002.

XX 19-JUL-2001; 2001WO-US022976.

XX 19-JUL-2000; 2000US-0219128P.

XX 17-OCT-2000; 2000JP-00317160.

XX (PERG-) PERGEN CORP.

XX PI

XX Sokawa Y, Liu C;

XX WPI; 2002-179784/23.

XX N-PSDB; ABA94936.

PT Oral-delivery composition for treating conditions relating to hepatitis
PT caused by hepatitis C virus, comprises ovine interferon-tau which
PT stimulates bloodstream levels of 2',5'-oligoadenylate synthetase.

XX Example 1; Page 32-33; 33pp; English.

CC The invention provides an oral-delivery composition for use in treating
CC hepatitis C virus (HCV) in a HCV-infected patient. The composition
CC comprises ovine interferon-tau (ovIFN-tau), in a dosage effective to
CC stimulate bloodstream levels of 2',5'-oligoadenylate synthetase (OAS).
CC The ovIFN-tau synthesizes OAS which degrades viral mRNA. A method is also
CC provided for monitoring the treatment of HCV by oral administration of
CC ovIFN-tau, by measuring the blood levels of OAS prior to and after such
CC oral administration, and if necessary, adjusting the dose of IFN-tau
CC until a measurable increase in blood OAS level, relative to the level
CC observed prior to administration. The composition is useful for treating
CC hepatitis caused by HCV and the method is useful for monitoring treatment
CC of HCV by oral administration of ovIFN-tau. The present sequence
CC represents an ovine interferon-tau protein

XX Sequence 172 AA;

Query Match 100.0%; Score 907; DB 5; Length 172;
Best Local Similarity 100.0%; Pred. No. 1e-92;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDQLQKQDAFPVLVEM 60

DB 1 CYLSRKLMDARENKLLDRMNRSLSPHSCLODRKDFGLPQEMVEGDQLQKQDAFPVLVEM 60

OY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

DB 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120

OY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVSTTLQKRLTKMGDLNSP 172

DB 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTVSTTLQKRLTKMGDLNSP 172

Db 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVGEQDLQKQOAFPVLYEM 60
 Qy 61 LQOSFNLFYTEHSSAANDTTLLLEQLCTGLQOOLHLDTCRCQGVMEGESELGNDPIVTV 120
 Db 61 LQOSFNLFYTEHSSAANDTTLLLEQLCTGLQOOLHLDTCRCQGVMEGESELGNDPIVTV 120
 Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMNRALTVTSTTLQKRLTKMGDGLNSP 172
 Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMNRALTVTSTTLQKRLTKMGDGLNSP 172
 RESULT 7
 ID ADM79177 standard; protein; 172 AA.
 AC ADM79177;
 XX 15-JUL-2004 (first entry)
 DE Mature ovine interferon tau protein SEQ ID NO:1.
 XX oral administration; interferon; IFN; ovine; mature interferon tau.
 XX Ovis aries.
 OS WO2004032863-A2.
 PN 22-APR-2004.
 PD 08-OCT-2003; 2003WO-US031999.
 PF 09-OCT-2002; 2002US-0417292P.
 PR (PEPG-) PEPGEN CORP.
 XX Manning MC, Nayar R;
 XX WPI; 2004-340799/31.
 DR A composition for oral administration of an interferon (IFN) comprises an
 XX IFN and a species that stabilizes the IFN in an active form by
 PT interaction between the interferon and the species.
 XX Example; SEQ ID NO 1; 52pp; English.
 PS The present invention describes a composition for the oral administration
 XX of an interferon (IFN) comprising an IFN and a species that stabilises
 CC the IFN in an active form by interaction between the IFN and the species.
 CC Also described: (1) preparing a protein for oral administration,
 CC comprising formulating the protein with a species that stabilises the
 CC protein in an active form by binding interaction between the protein and
 CC the species, therefore the formulating results in a composition for oral
 CC administration; and (2) selecting a dosage form composition for a protein
 CC that achieves protein stabilisation for biological activity upon in vivo
 CC administration, comprising selecting a protein for formulation, preparing
 CC solutions of the selected protein or polypeptide in different buffers at
 CC different pH values, and measuring the effect of the buffer on the
 CC protein's tertiary structure, where the measuring identifies buffers that
 CC result retention of the protein's tertiary structure. The composition and
 CC methods are useful for preparing oral dosage forms for administration of
 CC proteins and polypeptides. The present sequence represents the mature
 CC ovine interferon tau amino acid sequence, which is used in an example
 CC from the present invention.
 XX Sequence 172 AA;
 SQ Query Match 100.0%; Score 907; DB 8; Length 172;
 Best Local Similarity 100.0%; Pred. No. 1e-92;
 Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVGEQDLQKQOAFPVLYEM 60
 Db 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVGEQDLQKQOAFPVLYEM 60

RESULT 6
 ADI17857
 ID ADI17857 standard; protein; 172 AA.
 XX ADI17857;
 XX 22-APR-2004 (first entry)
 DE Mature ovine interferon-tau, SEQ ID NO:2.
 XX Interferon-tau; oral dosage form; oral administration; fasted state;
 KW 2',5'-oligoadenylate synthetase; OAS; autoimmune condition;
 KW multiple sclerosis; diabetes mellitus; Hashimoto's thyroiditis;
 KW rheumatoid arthritis; uveitis; psoriasis; systemic lupus erythematosus;
 KW allergy; asthma; eczema; Crohn's disease; ulcerative colitis;
 KW viral infection; HIV infection; hepatitis;
 KW cellular proliferation disorder; hepatitis;
 KW hairy cell leukaemia; inflammatory disease; multiple myeloma; ovarian cancer;
 KW cytostatic; antiinflammatory; neuroprotective; antidiabetic;
 KW thymostatic; antirheumatic; antiarthritic; ophthalmological;
 KW antipsoriatic; dermatological; antiallergic; antiasthmatic; antiulcer;
 KW anti-HIV; hepatotropic; vaccine; ovine; sheep.
 XX Ovis aries.
 OS Synthetic.
 XX WO2003061728-A2.
 PN 31-JUL-2003.
 PD 16-JAN-2003; 2003WO-US001596.
 PF 16-JAN-2002; 2002US-0349658P.
 XX (PEPG-) PEPGEN CORP.
 XX Sokawa Y, Liu C;
 XX WPI; 2003-598711/56.
 DR N-PSDB; ADI17856.
 PT An oral dosage form of interferon-tau administered to a subject in a
 XX fasted state to achieve an increased level of 2',5'-oligoadenylate
 PT synthetase, useful for treating a condition responsive to interferon-tau,
 PT e.g. viral infection.
 XX Claim 3; SEQ ID NO 2; 28pp; English.
 PS The invention relates to a composition for use in treating a condition
 XX responsive to interferon-tau, comprising an oral dosage form of interferon
 CC -tau. The composition is administered to a patient in a fasted state to
 CC increase the level of 2',5'-oligoadenylate synthetase (OAS) in the blood
 CC relative to that obtained after administration of interferon-tau to a fed
 CC patient. The interferon-tau used in the composition is preferably ovine
 CC or bovine. The composition is useful in the treatment of autoimmune
 CC conditions (e.g., multiple sclerosis, diabetes mellitus, Hashimoto's
 CC thyroiditis, rheumatoid arthritis, uveitis, psoriasis, systemic lupus
 CC erythematosus, allergies, asthma, eczema, Crohn's disease or ulcerative
 CC colitis), viral infections (e.g., HIV infection or hepatitis), disorders
 CC associated with cellular proliferation (e.g., multiple myeloma, ovarian
 CC cancer or hairy cell leukaemia), or inflammatory diseases. The present
 CC sequence represents mature ovine interferon-tau.
 XX Sequence 172 AA;
 SQ Query Match 100.0%; Score 907; DB 7; Length 172;
 Best Local Similarity 100.0%; Pred. No. 1e-92;
 Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVGEQDLQKQOAFPVLYEM 60

QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGGEEDSELGNMDFIVTV 120
 |||||
 Db 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGGEEDSELGNMDFIVTV 120
 |||||
 QY 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
 |||||
 Db 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
 |||||

RESULT 8

ADSI13613
 ID ADS13613 standard; protein; 172 AA.

XX
 AC ADS13613;
 XX
 DT 16-DEC-2004 (first entry)
 XX
 DE Sheep interferon tau seqid 2.
 XX
 KW immunosuppressive; cytostatic; virucide; neuroprotective; antidiabetic;
 KW muscular; antiinflammatory; antirheumatic; antiarthritic; antiaesthetic;
 KW dermatological; vaccine; interferon tau; 2',5'-oligoadenylate synthetase;
 KW OAS; autoimmune condition; cancer; viral infection; multiple sclerosis;
 KW hepatitis C infection; diabetes mellitus; systemic lupus erythematosus;
 KW amyotrophic lateral sclerosis; Crohn's disease; rheumatoid arthritis;
 KW asthma; uveitis; psoriasis; hypersensitivity disorder; sheep.
 XX
 OS Ovis aries.

XX US2004191217-A1.

XX 30-SEP-2004.

XX 21-NOV-2003; 2003US-00719472.

XX 19-JUL-2000; 2000US-0219128P.

XX 19-JUL-2001; 2001US-00910406.

PR 16-JAN-2002; 2002US-0349658P.

PR 16-JAN-2003; 2003US-00346269.

XX 31-OCT-2003; 2003US-00698927.

XX (SOKA/) SOKAWA Y.

PA (LIUC/) LIU C.

XX Sokawa Y, Liu C;

XX WPI; 2004-698654/68.

DR N-PSDB; ADS13612.

XX

PT Treating a condition in a subject, e.g. autoimmune condition, cancer or
 PT viral infection, comprises orally administering interferon-tau to the
 PT intestinal tract to increase the blood 2'5'-oligoadenylate synthetase
 PT level.

XX Claim 2; SEQ ID NO 2; 38pp; English.

XX The invention describes a method of treating a condition in a human
 CC subject responsive to interferon tau therapy comprises orally
 CC administering interferon-tau to the intestinal tract of the subject to
 CC produce an initial measurable increase in the subject's blood 2',5'-
 CC oligoadenylate synthetase (OAS) level, relative to the blood OAS level in
 CC the subject in the absence of interferon-tau administration. The method
 CC is useful for treating an autoimmune condition, cancer, or a viral
 CC infection. The method is particularly useful for treating multiple
 CC sclerosis or hepatitis C infection, diabetes mellitus, systemic lupus
 CC erythematosus, amyotrophic lateral sclerosis, Crohn's disease, rheumatoid
 CC arthritis, asthma, uveitis, psoriasis, and hypersensitivity disorders.
 CC This is the amino acid sequence of ovine interferon-tau.

XX Sequence 172 AA;

SQ Query Match 100.0%; Score 907; DB 8; Length 172;

Best Local Similarity 100.0%; Pred. No. 1e-92;
 Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOEMVEGDQLQKQDQAFPLVYEM 60
 |||||
 Db 1 CYSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOEMVEGDQLQKQDQAFPLVYEM 60
 |||||
 QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGGEEDSELGNMDFIVTV 120
 |||||
 Db 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGGEEDSELGNMDFIVTV 120
 |||||
 QY 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
 |||||
 Db 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
 |||||

RESULT 9

AAR04540

ID AAR04540 standard; protein; 195 AA.

XX
 AC AAR04540;
 XX
 DT 25-MAR-2003 (revised)
 DT 17-SEP-1990 (first entry)
 XX
 DE Ovine trophoblast protein-1 (otp-1).
 XX
 KW Bovine trophoblast protein-1; bTP-1; fertility; ds.

XX Sus scrofa.

XX EP367063-A.

XX 09-MAY-1990.

XX 23-OCT-1989; 89EP-00119642.

PR 26-OCT-1988; 88US-00262870.

XX (UMOR) UNIV MISSOURI.

XX Roberts MR, Imakawa K;

XX WPI; 1990-141062/19.

DR N-PSDB; AAQ04289.

XX

PT Recombinant bovine trophoblast protein-1 - used for enhancing fertility
 PT or treating viral diseases in mammal, esp. cattle.
 XX
 PS Disclosure; Page ?; 27pp; English.

XX The bTP-1 produced from the gene may be used to promote fertility or
 CC treat viral disease in cattle. The gene may also be used to provide
 CC transgenic animals with enhanced fertility, or in prophylactic and
 CC therapeutic treatment of other mammals. (Updated on 25-MAR-2003 to
 CC correct PA field.)
 XX

SQ Sequence 195 AA;

Query Match 100.0%; Score 907; DB 2; Length 195;
 Best Local Similarity 100.0%; Pred. No. 1.2e-92;
 Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CYSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOEMVEGDQLQKQDQAFPLVYEM 60
 |||||
 Db 24 CYSRKMLDARENKLLDRNRLSPHSCLODRKDFGLPOEMVEGDQLQKQDQAFPLVYEM 83
 |||||
 QY 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGGEEDSELGNMDFIVTV 120
 |||||
 Db 84 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQQQLDHLDTCRGQVMGGEEDSELGNMDFIVTV 143
 |||||
 QY 121 KYFQGIYDYLOEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGGLNSP 172
 |||||

Db 144 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTLQKRLTKMGDLNSP 195

RESULT 10

AAR09294

ID AAR09294 standard; protein; 172 AA.

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144 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTLQKRLTKMGDLNSP 195

RESULT 10

AAR09294

ID AAR09294 standard; protein; 172 AA.

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144 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTLQKRLTKMGDLNSP 195

RESULT 10

AAR09294

ID AAR09294 standard; protein; 172 AA.

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144 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTLQKRLTKMGDLNSP 195

RESULT 10

AAR09294

ID AAR09294 standard; protein; 172 AA.

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144 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTLQKRLTKMGDLNSP 195

RESULT 10

AAR09294

ID AAR09294 standard; protein; 172 AA.

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AC AAR24942;
 XX 25-MAR-2003 (revised)
 DT 03-JAN-1992 (first entry)
 XX
 XX Sequence of ovien trophoblastin variant Xa.
 DE
 XX Antiviral; antinflammatory; antitumour; immunomodulator; immunogen;
 KW trophoblastin; antiluteolytic agent.
 KW
 XX Ammotragus lervia.
 OS
 XX
 XX Key Location/Qualifiers
 FH Peptide 1..23
 FT /label= signal
 FT
 XX WO9209691-A1.
 XX
 XX 11-JUN-1992.
 PD
 XX
 XX 29-NOV-1991; 91WO-FR000953.
 XX
 XX 29-NOV-1990; 90FR-00014945.
 PR
 XX 29-NOV-1990; 90FR-00014946.
 PR
 XX (INRG) INRA INST NAT RECH AGRONOMIQUE.
 XX
 XX Martal J, Degryse E, Gaye P, Charlier M, Charpigny G, Reinaud P;
 PI Chaouat G;
 PI
 XX WPI; 1992-217070/26.
 XX
 XX New type I interferon variants with added N-terminal di:peptide - include
 PT expression cassettes providing high yield in yeast, esp. trophoblast
 PT derivs. with e.g. anti-luteolytic activity.
 PT
 XX Claim 7; Page 30; 53pp; French.
 PS
 XX The DNA sequence encoding the precursor of ovine trophoblastin was
 CC disclosed in PCT WO 85/08706 (see AAR24941). AAR24942-R24945 are isoforms
 CC of trophoblastin. They have anti-luteolytic activity and are used to
 CC improve survival of transplanted embryos; as a reagent for detecting
 CC viability of embryos at an early stage of its development; and to improve
 CC the fertility of livestock. (Updated on 25-MAR-2003 to correct PN field.)
 CC
 XX Sequence 195 AA;
 SQ
 Query Match 99.7%; Score 904; DB 2; Length 195;
 Best Local Similarity 99.4%; Pred. No. 2.7e-92;
 Matches 171; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CYLSRKLMDARENLKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFPVLYEM 60
 DB 24 CYLSRKLMDARENLKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFPVLYEM 83
 QY 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGESESELGNMDDPIVTV 120
 DB 84 LQOSFNLFTYTHSSAAWDTTLLDQLCTGLQQLDHLDTCRGQVMGESESELGNMDDPIVTV 143
 QY 121 KKYFGIYDYLQEGYSDCAWEIVRVMNRALTSTTLQKRLTKMGDLNSP 172
 DB 144 KKYFGIYDYLQEGYSDCAWEIVRVMNRALTSTTLQKRLTKMGDLNSP 195
 RESULT 13
 AAB31457
 ID AAB31457 standard; protein; 172 AA.
 XX
 XX AAB31457;
 AC
 XX 20-APR-2001 (first entry)
 DT
 XX Amino acid sequence of an ovine interferon-tau 1mod polypeptide.

XX Interferon-tau; IFN-tau; cancer; tumour growth; viral disease;
 KW autoimmune disease; multiple sclerosis; adenocarcinoma; breast cancer;
 KW prostate cancer; glioblastoma; melanoma; lymphoma; leukaemia;
 KW lung cancer; skin cancer; bladder cancer; kidney cancer; brain cancer;
 KW ovarian cancer; pancreatic cancer; uterine cancer; bone cancer;
 KW colorectal cancer; cervical cancer; neuroectodermal cancer; psoriasis;
 KW monoclonal gammopathy; dysplasia; diabetes mellitus;
 KW rheumatoid arthritis; lupus erythematosus.
 XX
 OS Ovis sp.
 XX
 XX WO200078266-A2.
 PN
 XX 28-DEC-2000.
 PD
 XX
 XX 22-JUN-2000; 2000WO-IB001080.
 PF
 XX 22-JUN-1999; 99US-0140411P.
 PR
 XX (UYMA-) UNIV MARYLAND BALTIMORE.
 PA
 XX Pontzer CH, Shorts LH, Clark CD;
 PI
 XX WPI; 2001-071357/08.
 XX
 XX N-PSDB; AAF24827.
 DR
 XX Producing recombinant interferon tau analog proteins with improved
 PT properties, useful for treating cancers, autoimmune diseases and viral
 PT infections.
 PT
 XX Claim 5; Page 59-60; 70pp; English.
 PS
 XX The present sequence represents an ovine interferon-tau 1mod polypeptide.
 CC The specification describes a method of making recombinant interferon
 CC (IFN)-tau proteins, which differ from wild-type IFN-tau by amino acid
 CC substitutions near the amino terminus of the molecule. The mutated IFN-
 CC tau proteins have improved biological activity, low toxicity, retain the
 CC same or slightly reduced antiviral activity compared with interferon
 CC alpha, and have enhanced antiproliferative activity compared to wild-type
 CC IFN-tau. The method is used for producing IFN-tau proteins with improved
 CC biological activities and properties. These IFN-tau may be administered
 CC to treat cancers and decrease tumour growth, treat viral diseases, treat
 CC autoimmune diseases and treat multiple sclerosis. The cancer or tumour is
 CC selected from the group comprising human adenocarcinoma, breast cancer,
 CC prostate cancer, glioblastomas, melanomas, myelomas, lymphomas,
 CC leukaemia, lung cancer, skin cancer, bladder cancer, kidney cancer, brain
 CC cancer, ovarian cancer, pancreatic cancer, uterine cancer, bone cancer,
 CC colorectal cancer, cervical cancer and neuroectodermal cancer, monoclonal
 CC gammopathies and cervical and oral dysplasia. The autoimmune disease is
 CC selected from Type I diabetes mellitus, rheumatoid arthritis, lupus
 CC erythematosus and/or psoriasis. The viral infection is an RNA virus, a
 CC human immuno deficiency virus (HIV) or hepatitis C virus
 CC
 XX Sequence 172 AA;
 SQ
 Query Match 99.2%; Score 900; DB 4; Length 172;
 Best Local Similarity 99.4%; Pred. No. 6.3e-92;
 Matches 171; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 CYLSRKLMDARENLKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFPVLYEM 60
 DB 1 CYLSRKLMDARENLKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFPVLYEM 60
 QY 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGESESELGNMDDPIVTV 120
 DB 61 LQOSFNLFTYTHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMGESESELGNMDDPIVTV 120
 QY 121 KKYFGIYDYLQEGYSDCAWEIVRVMNRALTSTTLQKRLTKMGDLNSP 172
 DB 121 KKYFGIYDYLQEGYSDCAWEIVRVMNRALTSTTLQKRLTKMGDLNSP 172

RESULT 14
AAO21461
ID AAO21461 standard; protein; 172 AA.
XX
XX AAO21461;
AC
XX 15-AUG-2002 (first entry)
DT
XX
DE Ovine interferon-tau (OvIFN-tau) protein.
DE
XX
KW Artificial ovine interferon-tau; OvIFN-tau; optimising; biased codon;
KW high yield production.
XX
OS Ovis aries.
OS Synthetic.
XX
XX WO200231178-A1.
FN
XX
XX 18-APR-2002.
PD
XX
XX 12-OCT-2001; 2001WO-US031862.
PF
XX
XX 12-OCT-2000; 2000US-0239746P.
PR
XX
XX (UABR-) UAB RES FOUND.
PA
XX
XX Krishna R, Rodriguez E, Johnson H;
PI
XX
XX WPI; 2002-426289/45.
DR
XX
XX N-PSDB; AAL38060.
DR
XX
XX New artificial ovine interferon-tau gene, useful for high protein
PT production, constructed by reducing repetitive and palindromic sequences,
PT lowering overall guanine and cytosine content and optimizing gene
PT sequence.
PT
XX
XX Disclosure; Fig 1A; 71pp; English.
PS
XX
XX The invention relates to an artificial ovine interferon-tau (OvIFN-tau)
CC gene designed for high yield protein production in yeast, and constructed
CC by reducing repetitive sequences, lowering overall G+C content, reducing
CC or eliminating palindromic sequences, and optimising the sequence of
CC OvIFN-tau, using the biased codon usage in the yeast. The expression
CC vector if the invention is useful for high yield production of OvIFN-tau
CC in the yeast of Pichia, preferably P. pastoris X33 or P. pastoris GS115,
CC by transforming the yeast with the expression vector, inducing protein
CC expression with methanol, culturing the yeast in defined culture
CC conditions such as shake flask or fermenter, and purifying the protein
CC from culture media. This sequence represents the ovine interferon-tau
CC (OvIFN-tau) protein of the invention
XX
XX Sequence 172 AA;
CC

Query Match 99.2%; Score 900; DB 5; Length 172;
Best Local Similarity 99.4%; Pred. No. 6.3e-92;
Matches 171; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Qy 1 CYLSKMLDARENKLLDRNRLSPHSCLOQRKDFGLPOEWMVEGDQLQKQAFPLYEM 60
Db 1 CYLSKMLDARENKLLDRNRLSPHSCLOQRKDFGLPOEWMVEGDQLQKQAFPLYEM 60
Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
Db 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMNRALTVSTTLQKRLTKMGGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMNRALTVSTTLQKRLTKMGGDLNSP 172

Search completed: October 28, 2005, 14:56:01
Job time : 124 secs

XX
AC ABB07589;
XX
XX 08-MAY-2002 (first entry)
XX
XX Recombinant ovine interferon-tau protein.
XX
XX Hepatitis C virus; HCV infection; ovine; interferon-tau; OvIFN-tau; OAS;
KW 2',5'-oligoadenylate synthetase; virucide; hepatotropic; IFN-tau.
XX
XX Ovis aries.
XX
XX WO200206343-A2.
FN
XX
XX 24-JAN-2002.
PD
XX
XX 19-JUL-2001; 2001WO-US022976.
PF
XX
XX 19-JUL-2000; 2000US-0219128P.
PR
XX
XX 17-OCT-2000; 2000JP-00317160.
PR
XX
XX (PEPG-) PEPGEN CORP.
PA
XX
XX Sokawa Y, Liu C;
PI
XX
XX WPI; 2002-179784/23.
DR
XX
XX N-PSDB; ABA94937.
DR
XX
XX Oral-delivery composition for treating conditions relating to hepatitis
PT caused by hepatitis C virus, comprises ovine interferon-tau which
PT stimulates bloodstream levels of 2',5'-oligoadenylate synthetase.
PT
XX
XX Example 1; Page 33; 33pp; English.
PS
XX
XX The invention provides an oral-delivery composition for use in treating
CC hepatitis C virus (HCV) in a HCV-infected patient. The composition
CC comprises ovine interferon-tau (OvIFN-tau) in a dosage effective to
CC stimulate bloodstream levels of 2',5'-oligoadenylate synthetase (OAS).
CC The OvIFN-tau synthesizes OAS which degrades viral mRNA. A method is also
CC provided for monitoring the treatment of HCV by oral administration of
CC OvIFN-tau, by measuring the blood levels of OAS prior to and after such
CC oral administration, and if necessary, adjusting the dose of IFN-tau
CC until a measurable increase in blood OAS level, relative to the level
CC observed prior to administration. The composition is useful for treating
CC hepatitis caused by HCV and the method is useful for monitoring treatment
CC of HCV by oral administration of OvIFN-tau. The present sequence
CC represents a recombinant ovine interferon-tau protein
XX
XX Sequence 172 AA;
CC

Query Match 99.1%; Score 899; DB 5; Length 172;
Best Local Similarity 98.8%; Pred. No. 8.1e-92;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Qy 1 CYLSKMLDARENKLLDRNRLSPHSCLOQRKDFGLPOEWMVEGDQLQKQAFPLYEM 60
Db 1 CYLSKMLDARENKLLDRNRLSPHSCLOQRKDFGLPOEWMVEGDQLQKQAFPLYEM 60
Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
Db 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDDPIVTV 120
Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMNRALTVSTTLQKRLTKMGGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMNRALTVSTTLQKRLTKMGGDLNSP 172

Search completed: October 28, 2005, 14:56:01
Job time : 124 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:51:03 ; Search time 25 Seconds
(without alignments)
661.971 Million cell updates/sec

Title: US-10-719-472-2

Perfect score: 907

Sequence: 1 CYLSRKLMLDARENKLKLDLDR.....TVSTTLQKRLTKVGGDLNSP 172

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR 79:.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Match	Length	ID	Description
1	897	98.9	195	2 JS0204	trophoblast interf
2	880	97.0	195	2 I47068	trophoblast protel
3	868	95.7	195	2 I47066	trophoblast protel
4	865	95.4	195	2 I47069	trophoblast protel
5	847	93.4	172	2 A61578	trophoblast interf
6	846	93.3	195	2 I46272	trophoblast interf
7	842	92.8	195	2 A61455	trophoblast protel
8	806	88.9	195	2 I47067	trophoblast protel
9	778	85.8	195	2 I47097	trophoblast protel
10	745	82.1	184	2 I47098	trophoblast protel
11	724	79.8	195	2 A39505	trophoblast interf
12	723	79.7	195	2 S23751	trophoblast interf
13	720	79.4	195	2 A40068	trophoblast protel
14	720	79.4	195	2 B39505	trophoblast protel
15	609	67.1	195	2 A53746	interferon, tropho
16	608	67.0	195	2 A61403	interferon alpha-I
17	587	64.7	195	2 I47070	interferon omega -
18	585	64.5	195	2 I46397	interferon alpha -
19	582	64.2	195	1 IVB011	interferon alpha-I
20	513.5	56.6	190	2 S23711	interferon alpha-I
21	499	55.0	195	1 IVH022	interferon alpha-I
22	497	54.8	110	2 B61578	trophoblast protel
23	488.5	53.9	190	2 S23712	interferon alpha-I
24	473	52.1	195	1 IVH011	interferon omega-I
25	469.5	51.8	179	2 S23710	interferon alpha-I
26	454	50.1	189	2 I51970	interferon precurs
27	446	49.2	176	2 I56314	interferon-alpha -
28	444	49.0	195	1 IVH021	interferon alpha-I
29	440	48.5	189	1 IVH014	interferon alpha-I

ALIGNMENTS

RESULT 1

JS0204

trophoblast interferon alpha precursor - sheep

N:Alternate names: antiluteolysin; trophoblast antiluteolytic protein; trophoblastic prot

C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)

C>Date: 31-Mar-1990 #sequence revision 31-Mar-1990 #text change 09-Jul-2004

C:Accession: S03799; B61403; JS0204; A60947; A53867; S06221; S00306; A60857; A60936

R:Stewart, H.J.; Flint, A.P.F.; Lamming, G.E.; McCann, S.H.E.; Parkinson, T.J.

submitted to the EMBL Data Library, June 1988

A:Reference number: S03799

A:Accession: S03799

A:Molecule type: DNA

A:Residues: 1-195 <STE>

A:Cross-references: UNIPROT:P56828; UNIPROT:P56829; EMBL:X07920; NID:g1821; PIDN:CAA3075;

R:Charlier, M.; Hue, D.; Boissard, M.; Martal, J.; Gaye, P.

Mol. Cell. Endocrinol. 76, 161-171, 1991

A:Title: Cloning and structural analysis of two distinct families of ovine interferon-alf

A:Reference number: A61403; MUID:92324492; PMID:1820971

A:Accession: B61403

A>Status: not compared with conceptual translation

A:Molecule type: DNA

A:Residues: 1-129,'K',131-195 <CHA>

R:Charlier, M.; Hue, D.; Martal, J.; Gaye, P.

Gene 77, 341-348, 1989

A:Title: Cloning and expression of cDNA encoding ovine trophoblastin: its identity with a

A:Reference number: JS0204; MUID:89326151; PMID:2753362

A:Accession: JS0204

A:Molecule type: mRNA

A:Residues: 1-195 <CHM>

A:Cross-references: GB:M26386; NID:g530199; PIDN:AAA31584.1; PID:g530200

A:Experimental source: embryo

R:Stewart, H.J.; McCann, S.H.E.; Northrop, A.J.; Lamming, G.E.; Flint, A.P.F.

J. Mol. Endocrinol. 2, 65-70, 1989

A:Title: Sheep antiluteolytic interferon: cDNA sequence and analysis of mRNA levels.

A:Reference number: A60947; MUID:89351557; PMID:2475129

A:Accession: A60947

A:Molecule type: mRNA

A:Residues: 1-195 <ST3>

R:Stewart, H.J.; Flint, A.P.F.; Lamming, G.E.; McCann, S.H.E.; Parkinson, T.J.

J. Reprod. Fert. Suppl. 37, 127-138, 1989

A:Title: Antiluteolytic effects of blastocyst-secreted interferon investigated in vitro a

A:Reference number: A53867; MUID:90040431; PMID:2530342

A:Accession: A53867

A:Molecule type: mRNA

A:Residues: 1-195 <ST4>

R:Imakawa, K.; Anthony, R.V.; Kazemi, M.; Marrotti, K.R.; Polites, H.G.; Roberts, R.M.

Nature 330, 377-379, 1987

A:Title: Interferon-like sequence of ovine trophoblast protein secreted by embryonic trof

A:Reference number: S06221; MUID:88065855; PMID:2446135

A:Accession: S06221

A:Molecule type: mRNA

A:Residues: 1-27,'RK',30-105,'E',107-195 <IMA>

Db 24 CYLSRKLMDARENLRLDRMNRSLSPHSCLOQRKDFGLPQEMVEGDLQKQDQAFVLYEM 83
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMNDPIVTV 120
Db 84 LQOSFNLFTYHSSAAWDTTLLDQLCTGLQOQLDHLDTCRGQVMGEKDSSELGNMNDPIVTV 143
QY 121 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 172
Db 144 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 195
RESULT 5
A61578
trophoblast protein 1 (clone SPW49) - sheep (fragment)
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 17-Mar-1999
C:Accession: A61578
R:Watkins, S.P.; Jeacock, M.K.; Savva, D.; Shepherd, D.A.L.
Int. J. Biochem. 23, 1013-1018, 1991
A:Title: Ovine trophoblast protein-one: evidence for possible glycosylation.
A:Reference number: A61578; MUID:92155417; PMID:1786844
A:Accession: A61578
A:Molecule type: mRNA
A:Residues: 1-172 <MAT>
C:Superfamily: interferon alpha
C:Keywords: glycoprotein; pregnancy maintenance
F:78/Binding site: carbohydrate (Asn) (covalent) #status predicted
Query Match 93.4%; Score 847; DB 2; Length 172;
Best Local Similarity 93.0%; Pred. No. 2.2e-70;
Matches 160; Conservative 7; Mismatches 5; Indels 0; Gaps 0;
QY 1 CYLSRKLMDARENLRLDRMNRSLSPHSCLOQRKDFGLPQEMVEGDLQKQDQAFVLYEM 60
Db 1 CYLSRKLMDARENLRLDRMNRSLSPHSCLOQRKDFGLPQEMVEGDLQKQDQAFVLYEM 60
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMNDPIVTV 120
Db 61 LQOSFNLFTYHSSAAWNTTLLLEQLCTGLQOQLDHLDTCKGPMWGEKDSSELGNMNDPIVTV 120
QY 121 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 172
Db 121 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLKSP 172
RESULT 6
I46272
trophoblast interferon - goat
C:Species: Capra aegagrus hircus (domestic goat)
C:Date: 21-Feb-1997 #sequence_revision 21-Feb-1997 #text_change 09-Jul-2004
C:Accession: I46272
R:Leaman, D.W.; Roberts, R.M.
J. Interferon Res. 12, 1-11, 1992
A:Title: Genes for the trophoblast interferons in sheep, goat, and musk ox and distrib
A:Reference number: I46272; MUID:92242937; PMID:1374107
A:Accession: I46272
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-195 <LEA>
A:Cross-references: UNIPROT:P28171; GB:M73243; NID:G164116; PIDN:AAA30907.1; PID:G164117
C:Genetics:
A:Gene: CTP-1
C:Superfamily: interferon alpha
Query Match 93.3%; Score 846; DB 2; Length 195;
Best Local Similarity 93.6%; Pred. No. 3.2e-70;
Matches 161; Conservative 4; Mismatches 7; Indels 0; Gaps 0;
QY 1 CYLSRKLMDARENLRLDRMNRSLSPHSCLOQRKDFGLPQEMVEGDLQKQDQAFVLYEM 60
Db 24 CYLSRKLMDARENLRLDRMNRSLSPHSCQQRKDFGLPQEMVEGDLQKQDQAFVLYEM 83

QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMNDPIVTV 120
Db 84 LQOSFNLFTYHSSAAWDTTLLDQLCTGLQOQLDHLDTCRGQVMGEKDSSELGNMNDPIVTV 143
QY 121 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 172
Db 144 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 195
RESULT 7
A61455
trophoblast protein 1 precursor - sheep
N:Alternate names: interferon
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1994 #sequence_revision 15-Oct-1994 #text_change 09-Jul-2004
C:Accession: A61455; S12624
R:Roberts, R.M.; Cross, J.C.; Farin, C.E.; Hansen, T.R.; Klemann, S.W.; Imakawa, K.
J. Reprod. Fertil. Suppl. 41, 63-74, 1990
A:Title: Interferons at the placental interface.
A:Reference number: A61455; MUID:91012357; PMID:2213717
A:Accession: A61455
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-195 <ROB>
A:Cross-references: UNIPROT:Q29429
R:Klemann, S.W.; Imakawa, K.; Roberts, R.M.
Nucleic Acids Res. 18, 6724, 1990
A:Title: Sequence variability among ovine trophoblast interferon cDNA.
A:Reference number: S12624; MUID:91067497; PMID:1701245
A:Accession: S12624
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-195 <KLE>
A:Cross-references: EMBL:X56343; NID:G1155013; PIDN:CAA39783.1; PID:G1155014
A:Experimental source: clone oTP-1 p6
C:Superfamily: interferon alpha
F:1-23/Domain: signal sequence #status predicted <SIG>
F:24-195/Product: trophoblast protein 1 #status predicted <MAT>
Query Match 92.8%; Score 842; DB 2; Length 195;
Best Local Similarity 93.0%; Pred. No. 7.4e-70;
Matches 160; Conservative 6; Mismatches 6; Indels 0; Gaps 0;
QY 1 CYLSRKLMDARENLRLDRMNRSLSPHSCLOQRKDFGLPQEMVEGDLQKQDQAFVLYEM 60
Db 24 CYLSRKLMDARENLRLDRMNRSLSPHSCLOQRKDFGLPQEMVEGDLQKQDQAFVLYEM 83
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEDESELGNMNDPIVTV 120
Db 84 LQOSFNLFTYHSSAAWNTTLLLEQLCTGLQOQLDHLDTCRGPMWGEKDSSELGNMNDPIVTV 143
QY 121 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 172
Db 144 KKYFOGIYDYLQEKGYSDCAWEIVRVMNRALTTSVTTLQKRLTKMGDDLNSP 195
RESULT 8
I47067
trophoblast protein-1 - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 09-Jul-2004
C:Accession: I47067
R:Nephew, K.P.; Whaley, A.E.; Christenson, R.K.; Imakawa, K.
Biol. Reprod. 48, 768-778, 1993
A:Title: Differential expression of distinct mRNAs for ovine trophoblast protein-1 and r
A:Reference number: I46397; MUID:93250155; PMID:8485241
A:Accession: I47067
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-195 <NEP>
A:Cross-references: UNIPROT:Q08053; GB:M88770; NID:G165822; PIDN:AAA31504.1; PID:G165823
C:Genetics:
A:Gene: TP-02

C:Superfamily: interferon alpha

Query Match 88.9%; Score 806; DB 2; Length 195;
Best Local Similarity 89.5%; Pred. No. 1.5e-66;
Matches 154; Conservative 9; Mismatches 9; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSITLQKRLTKMGGLNSP 172
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSITLQKRLTKMGGLNSP 195

RESULT 9
147097
trophoblast protein-1 - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 09-Jul-2004
C:Accession: I47097
R:Leaman, D.W.; Roberts, R.M.
J. Interferon Res. 12, 1-11, 1992
A:Title: Genes for the trophoblast interferons in sheep, goat, and musk ox and distributed
A:Reference number: I46272; MUID:92242937; PMID:1374107
A:Accession: I47097
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-195 <LEA>
A:Cross-references: UNIPROT:P28169; GB:M73241; NID:g166025; PIDN:AAA31573.1; PID:g166026
C:Genetics:
A:Gene: OTP-1
C:Superfamily: interferon alpha

Query Match 85.8%; Score 778; DB 2; Length 195;
Best Local Similarity 86.6%; Pred. No. 5.4e-64;
Matches 149; Conservative 13; Mismatches 10; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSITLQKRLTKMGGLNSP 172
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSITLQKRLTKMGGLNSP 195

RESULT 10
147098
trophoblast protein-1 - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 15-Oct-1996 #sequence_revision 15-Oct-1996 #text_change 16-Jul-1999
C:Accession: I47098
R:Leaman, D.W.; Roberts, R.M.
J. Interferon Res. 12, 1-11, 1992
A:Title: Genes for the trophoblast interferons in sheep, goat, and musk ox and distributed
A:Reference number: I46272; MUID:92242937; PMID:1374107
A:Accession: I47098
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-194 <LEA>
A:Cross-references: GB:M73242; NID:g166027; PIDN:AAA31574.1; PID:g166028
C:Genetics:
A:Gene: OTP-1
C:Superfamily: interferon alpha

Query Match 82.1%; Score 745; DB 2; Length 184;
Best Local Similarity 88.8%; Pred. No. 5.3e-61;
Matches 142; Conservative 10; Mismatches 8; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSITLQK 160
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSITLKK 183

RESULT 11
A39505
trophoblast interferon 4 precursor (clone bTP4) - bovine
C:Species: Bos primigenius taurus (cattle)
C:Date: 30-Dec-1991 #sequence_revision 30-Dec-1991 #text_change 09-Jul-2004
C:Accession: A39505
R:Hansen, T.R.; Leaman, D.W.; Cross, J.C.; Mathialagan, N.; Bixby, J.A.; Roberts, R.M.
J. Biol. Chem. 266, 3060-3067, 1991
A:Title: The genes for the trophoblast interferons and the related interferon-alphaII pos
A:Reference number: A39505; MUID:91131606; PMID:1704373
A:Accession: A39505
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-195 <HAN>
A:Cross-references: UNIPROT:P15696; GB:M60908; NID:g163213; PIDN:AAA62711.1; PID:g163214;
C:Superfamily: interferon alpha
F:1-23/Domain: signal sequence #status predicted <SIG>
F:24-195/Product: interferon alpha-II #status predicted <MAT>

Query Match 79.8%; Score 724; DB 2; Length 195;
Best Local Similarity 80.7%; Pred. No. 4.7e-59;
Matches 138; Conservative 14; Mismatches 19; Indels 0; Gaps 0;

QY 1 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 60
DB 24 CYLSRKLMLDARENKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPVLYEM 83

QY 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
DB 84 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMEEDSELGNMDDPIVTV 143

QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSITLQKRLTKMGGLNS 171
DB 144 KKYFGIHYDYLQEKGYSDCAWEIVRVMRALTTSITLQKRLTKMGGLNS 194

RESULT 12
S23751
trophoblast interferon type I precursor - bovine
C:Species: Bos primigenius taurus (cattle)
C:Date: 19-Feb-1994 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
C:Accession: S23751
R:Stewart, H.J.; McCann, S.H.E.; Flint, A.P.F.
J. Mol. Endocrinol. 4, 275-282, 1990
A:Title: Structure of an interferon-alpha2 gene expressed in the bovine conceptus early i
A:Reference number: S23751; MUID:90334707; PMID:2378676
A:Accession: S23751
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-195 <STE>
A:Cross-references: UNIPROT:P15696; EMBL:X65539; NID:g765; PIDN:CAA46506.1; PID:g766
C:Superfamily: interferon alpha

Query Match 79.7%; Score 723; DB 2; Length 195;
Best Local Similarity 80.7%; Pred. No. 5.9e-59;

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:49:06 ; Search time 115.5 Seconds
(without alignments)
762.577 Million cell updates/sec

Title: US-10-719-472-2
Perfect score: 907
Sequence: 1 CYLSRKMLDARENKLLDR.....TVSTTLQKRLTKMGDLNSP 172

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Uniprot_03.*
1: uniprot_sprot.*
2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	907	100.0	195	1 INT1 SHEEP	P56828 ovis aries
2	900	99.2	195	1 INT2 SHEEP	P56829 ovis aries
3	888	97.9	195	1 INT3 SHEEP	P56832 ovis aries
4	881	97.1	195	1 INT4 SHEEP	Q28594 ovis aries
5	880	97.0	195	1 INT7 SHEEP	Q08071 ovis aries
6	877	96.7	195	1 INT5 SHEEP	Q28595 ovis aries
7	868	95.7	195	1 INT9 SHEEP	Q08070 ovis aries
8	865	95.4	195	1 INT8 SHEEP	Q08072 ovis aries
9	846	93.3	195	1 INT_CAPHI	P28171 capra hircu
10	842	92.8	195	1 INT6 SHEEP	Q29429 ovis aries
11	830	91.5	195	2 Q6U249	Q6u249 capra hircu
12	830	91.5	195	2 Q6U250	Q6u250 capra hircu
13	816	90.0	172	2 Q6RFZ8	Q6rfz8 ovis aries
14	806	88.9	195	1 INTA SHEEP	Q08053 ovis aries
15	804	88.6	195	2 Q6U247	Q6u247 capra hircu
16	794	87.5	195	2 Q6U243	Q6u243 capra hircu
17	786	86.7	195	2 Q6U242	Q6u242 capra hircu
18	780	86.0	195	1 INT_OVIMO	P28172 ovibos mosc
19	778	85.8	195	1 INTB SHEEP	P28169 ovis aries
20	726	80.0	195	1 INT1 BOVIN	P15696 bos taurus
21	721	79.5	172	1 INT2 BOVIN	P56830 bos taurus
22	719	79.3	172	2 Q8MJ29	Q8mj29 bos taurus
23	717	79.1	195	2 Q9MYK6	Q9myk6 bos taurus
24	707	77.9	172	1 INT3 BOVIN	P56831 bos taurus
25	702	77.4	195	2 Q9GLL6	Q9gll6 bos taurus
26	696	76.7	172	2 Q6DUH3	Q6duh3 bison bison
27	693	76.4	195	2 Q9GLL5	Q9gll5 bos taurus
28	679	74.9	195	1 INT_GIRCA	Q95187 giraffa cam
29	653	72.0	195	1 INT_CEREL	Q46833 cervus elap
30	609	67.1	195	1 INT1_HUMAN	P37290 homo sapien
31	608	67.0	195	2 Q7M2Y7	Q7m2y7 ovis aries

32	587	64.7	195	2	P28170	P28170 ovis aries
33	585	64.5	195	2	Q28561	Q28561 ovis aries
34	582	64.2	195	1	IN01_BOVIN	P07352 bos taurus
35	531	58.5	129	2	Q6SMQ8	Q6smg8 bos mutus g
36	513.5	56.6	190	2	Q29085	Q29085 sus scrofa
37	499	55.0	195	1	IN02_HORSE	P05002 equus cabal
38	488.5	53.9	190	2	Q29098	Q29098 sus scrofa
39	473	52.1	195	1	IN01_HUMAN	P05000 homo sapien
40	469.5	51.8	179	2	Q29084	Q29084 sus scrofa
41	462	50.9	41	2	Q13168	Q13168 homo sapien
42	444	49.0	195	1	IN01_HORSE	P05001 equus cabal
43	440	48.5	189	1	INAS_HUMAN	P01569 homo sapien
44	440	48.5	189	1	INAD_HUMAN	P01570 homo sapien
45	438	48.3	189	1	INAG_HUMAN	P01571 homo sapien

ALIGNMENTS

RESULT 1
INT1 SHEEP
ID INT1 SHEEP STANDARD; PRT; 195 AA.
AC P56828; P08316;
DT 01-AUG-1988 (Rel. 08, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Interferon tau-1 precursor (IFN-tau1) (Trophoblast protein-1) (TP-1)
DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein).
GN Name=IFNT1; Synonyms=OTP;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]_TaxID=9940;
RP SEQUENCE FROM N.A.
RC TISSUE=Trophoblast;
RX MEDLINE=88065855; PubMed=2446135; DOI=10.1038/330377a0;
RA Imakawa K., Antony R.V., Kazemi M., Marotti K.R., Polites H.G.,
RA Roberts R.M.;
RT "Interferon-like sequence of ovine trophoblast protein secreted by
RT embryonic trophoctoderm.";
RL Nature 330:377-379 (1987).
RN [2]
RP FUNCTION.
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen
RT receptor and oxytocin receptor genes in the ovine endometrium.";
RL Endocrinology 137:1144-1147(1996).
RN [3]
RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau.";
RL Protein Eng. 7:863-867(1994).
RN [4]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau.";
RL J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [5]
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Martal J.L., Chene N.M., Huynh L.P., L'Hardon R.M., Reinaud P.B.,
RA Guillonet M.W., Charlier M.A., Charpigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
RT ubiquitous expression, structure-function relationships, a pregnancy
RT hormonal embryonic signal and cross-species therapeutic
RT potentialities.";
RL Biochimie 80:755-777(1998).

CC CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal
 CC recognition of pregnancy. Interacts with endometrial receptors,
 CC probably type I interferon receptors, and blocks estrogen receptor
 CC expression, preventing the estrogen-induced increase in oxytocin
 CC receptor expression in the endometrium. This results in the
 CC suppression of the pulsatile endometrial release of the luteolytic
 CC hormone prostaglandin F2-alpha, hindering the regression of the
 CC corpus luteum (luteolysis) and therefore a return to ovarian
 CC cyclicity. This, and a possible direct effect of IFN-tau on
 CC prostaglandin synthesis, leads in turn to continued ovarian
 CC progesterone secretion, which stimulates the secretion by the
 CC endometrium of the nutrients required for the growth of the
 CC conceptus. In summary, displays particularly high antiviral and
 CC antiproliferative potency concurrently with particular weak
 CC cytotoxicity, high antiluteolytic activity and immunomodulatory
 CC properties. In contrast with other IFNs, IFN-tau is not virally
 CC inducible.
 CC
 CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
 CC
 CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
 CC the mononuclear cells of the extra-embryonic trophoctoderm.
 CC
 CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
 CC sheep conceptus between days 13 and 21 of pregnancy.
 CC
 CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
 CC IFN-omega genes in the ruminantia suborder and have continued to
 CC duplicate independently in different lineages of the ruminantia.
 CC They encode for proteins very similar in sequence but with
 CC different biological potency and pattern of expression.
 CC
 CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
 CC alpha1 subfamily.
 CC
 CC -----
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 CC -----
 CC DR EMBL; Y00287; CA668396.1; -.
 CC DR PIR; S03799; J50204.
 CC DR PDB; 1B5L; X-ray; @=24-195.
 CC DR InterPro; IPR009079; 4.Helix cytokine.
 CC DR InterPro; IPR000471; Interferon_abd.
 CC DR Pfam; PF00143; Interferon; 1.
 CC DR PRINTS; PR00266; INTERFERONAB.
 CC DR ProDom; PD000350; Interferon_abd; 1.
 CC DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
 CC DR 3D-structure; Antiviral; Cytokine; Hormone; Multigene family;
 CC KW Pregnancy; Signal.
 CC FT SIGNAL 1 23
 CC FT CHAIN 24 195
 CC FT CHAIN 24 195
 CC FT DISULFID 24 122
 CC FT DISULFID 52 162
 CC FT TURN 25 26
 CC FT HELIX 27 46
 CC FT TURN 47 47
 CC FT TURN 63 63
 CC FT HELIX 64 68
 CC FT TURN 69 69
 CC FT HELIX 73 95
 CC FT TURN 96 97
 CC FT TURN 100 101
 CC FT HELIX 103 122
 CC FT HELIX 138 156
 CC FT TURN 157 159
 CC FT HELIX 161 186
 CC SQ SEQUENCE 195 AA; 22192 MW; A4965AE25DEASBC9 CRC64;
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 CC Query Match 100.0%; Score 907; DB 1; Length 195;
 CC Best Local Similarity 100.0%; Pred. No. 3.3e-76;
 CC Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 CC
 CC 1 CYLSRKLMLDARENKLLDRMNLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVLEM 60

Db 24 CYLSRKLMLDARENKLLDRMNLSPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVLEM 83
 Qy 61 LQSQFNLFYTEHSSAAWDTTLLEQLCTGLQQLDHLDTCRQVNGEEDSEIGNMDPIVTV 120
 Db 84 LQSQFNLFYTEHSSAAWDTTLLEQLCTGLQQLDHLDTCRQVNGEEDSEIGNMDPIVTV 143
 Qy 121 KKYFGQYDYLQEGYSDCAWEIVRVEMRALTVTSTTLOKRLTKMGGLNSP 172
 Db 144 KKYFGQYDYLQEGYSDCAWEIVRVEMRALTVTSTTLOKRLTKMGGLNSP 195
 RESULT 2
 INT2_SHEEP
 ID INT2_SHEEP STANDARD; PRT; 195 AA.
 AC P56829; P08316;
 DT 01-AUG-1988 (Rel. 08, Created)
 DT 30-MAY-2000 (Rel. 39, Last sequence update)
 DT 05-JUL-2004 (Rel. 44, Last annotation update)
 DE Interferon tau-2 precursor (IFN-tau2) (Trophoblast protein-1) (TP-1)
 DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein).
 GN Name=IFN12;
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Ovis.
 OC NCBL_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A. (IFN-TAU2C).
 RX MEDLINE=90040431; PubMed=2530342;
 RA Stewart H.J., Flint A.P., Lamming G.E., McCann S.H., Parkinson T.J.;
 RT "Antiluteolytic effects of blastocyst-secreted interferon investigated
 RT in vitro and in vivo in the sheep."; 37:127-138 (1989).
 RL J. Reprod. Fertil. Suppl. 37:127-138 (1989).
 RN [2]
 RP SEQUENCE FROM N.A. (IFN-TAU2C).
 RX MEDLINE=89351557; PubMed=2475129;
 RA Stewart H.J., McCann S.H., Northrop A.J., Lamming G.E., Flint A.P.;
 RT "Sheep antiluteolytic interferon: cDNA sequence and analysis of mRNA
 RT levels."; 37:127-138 (1989).
 RN [3]
 RP SEQUENCE FROM N.A. (IFN-TAU2C).
 RX MEDLINE=89326151; PubMed=2753362; DOI=10.1016/0378-1119(89)90082-6;
 RA Charlier M., Hue D., Martal J., Gaye P.;
 RT "Cloning and expression of cDNA encoding ovine trophoblastin: its
 RT identity with a class-II alpha interferon."; 77:341-348 (1989).
 RN [4]
 RP SEQUENCE FROM N.A. (IFN-TAU2C).
 RX MEDLINE=91067497; PubMed=1701245;
 RA Klemann S.W., Imakawa K., Roberts R.M.;
 RT "Sequence variability among ovine trophoblast interferon cDNA."; 18:6724-6724 (1990).
 RN [5]
 RP SEQUENCE OF 24-195 FROM N.A. (IFN-TAU2A AND IFN-TAU2B).
 RC TISSUE=Embryo;
 RA Winkelman G.L., Roberts R.M., Peterson A.J., Alexenko A.P., Ealy A.D.;
 RT "Identification of the expressed forms of ovine interferon-tau in the
 RT peri-implantation conceptus: sequence relationships and comparative
 RT biological activities."; 18:6724-6724 (1990).
 RN [6]
 RP Submitted (JUN-1999) to the EMBL/GenBank/DBJ databases.
 RN [6]
 RP SEQUENCE OF 24-68.
 RX MEDLINE=88137579; PubMed=3254170; DOI=10.1016/0014-5793(88)80574-X;
 RA Charpigny G., Reinaud P., Huet J.-C., Guillemot M., Charlier M.,
 RA Pernollet J.-C., Martal J.;
 RT "High homology between a trophoblastic protein (trophoblastin)
 RT isolated from ovine embryo and alpha-interferons."; 228:12-16 (1988).
 RN [7]
 RP FUNCTION.

probably type I interferon receptors, and blocks estrogen receptor expression, preventing the estrogen-induced increase in oxytocin receptor expression in the endometrium. This results in the suppression of the pulsatile endometrial release of the luteolytic hormone prostaglandin F2-alpha, hindering the regression of the corpus luteum (luteolysis), and therefore a return to ovarian cyclicity. This, and a possible direct effect of IFN-tau on prostaglandin synthesis, leads in turn to continued ovarian progesterone secretion, which stimulates the secretion by the endometrium of the nutrients required for the growth of the conceptus. In summary, displays particularly high antiviral and antiproliferative potency concurrently with particular weak cytotoxicity, high antiluteolytic activity and immunomodulatory properties. In contrast with other IFNs, IFN-tau is not virally inducible.

-1- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

-1- TISSUE SPECIFICITY: Constitutively and exclusively expressed in the mononuclear cells of the extra-embryonic trophoblast.

-1- DEVELOPMENTAL STAGE: Major secretory product synthesized by the sheep conceptus between days 13 and 21 of pregnancy.

-1- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from duplicate independently in different lineages of the ruminantia. They encode for proteins very similar in sequence but with different biological potency and pattern of expression.

-1- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-alpha11 subfamily.

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EMBL: X56341; CAA99781.1; --
 HSSP: P36828; 1B5L.
 InterPro: IPR009079; 4 helix cytokine.
 InterPro: IPR000471; Interferon_abd.
 Pfam: PF00143; Interferon: 1.
 PRINTS: PR00266; INTERFERONAB.
 ProDom: PD000550; Interferon_abd; 1.
 PROSITE: PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
 FT SIGNAL 1 23 By similarity.
 CHAIN 24 195 Interferon tau-4.
 FT DISULFID 24 122 By similarity.
 FT DISULFID 52 162 By similarity.
 FT SEQUENCE 195 AA; 22209 MW; 408BD4BDBF5AA931 CRC64;
 Query Match 97.1%; Score 881; DB 1; Length 195;
 Best Local Similarity 96.5%; Pred.No.8.5e-74;
 Matches 166; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSRKLMDARENKLLDRMRLSPHSLQDRKDFLQFQWVEGDLQKQDAFFVLYEM 60
 Db |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||: 83
 24 CYLSRKLMDARENKLLDRMRLSPHSLQDRKDFLQFQWVEGDLQKQDAFFVLYEM 83

QY 61 LQSFNLFYTEHSSAWDTLLBOLCTGLQQLDHLDTCRGQVMBEDELGNMDPIVTV 120
 Db |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||: 143
 84 LQSFNLFYTEHSSAWDTLLBOLCTGLQQLDHLDTCRDQVMBEDELGNMDPIVTV 143

QY 121 KXYFQGIYDYLQKGYSDCAWEIVRVMRALTVTTLQKRLTKMGDLNSP 172
 Db |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||: 195
 144 KXYFQGIYDYLQKGYSDCAWEIVRVMRALTVTTLQKRLTKMGDLNSP 195

RESULT 5
 INT7 SHEEP
 ID INT7 SHEEP PRT; 195 AA.
 AC Q08071;
 DT 30-MAY-2000 (Rel. 39, Created)

DT 30-MAY-2000 (Rel. 39, Last sequence update)
 DE 05-JUL-2004 (Rel. 44, Last annotation update)
 DE Interferon tau-7 precursor (IFN-tau7) (Trophoblast protein-1) (TP-1)
 DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein)
 DE (TP-07).
 GN Name=IFNT7;
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]_TaxID=9940;
 RP SEQUENCE FROM N.A.
 RC TISSUE=Trophoblast;
 RX MEDLINE=93250155; PubMed=8485241;
 RA Nephew K.P., Whaley A.E., Christenson R.K., Imakawa K.;
 RT "Differential expression of distinct mRNAs for ovine trophoblast protein-1 and related sheep type I interferons.";
 RL Biol. Reprod. 48:768-778(1993).
 RN [2]
 RP FUNCTION.
 RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
 RA Spencer T.E., Bazer F.W.;
 RT "Ovine interferon tau suppresses transcription of the estrogen receptor and oxytocin receptor genes in the ovine endometrium.";
 RL Endocrinology 137:1144-1147(1996).
 RN [3]
 RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
 RX MEDLINE=95062134; PubMed=7971949;
 RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
 RA Krishna N.R., Pontzer C.H.;
 RT "Predicted structural motif of IFN tau.";
 RL Protein Eng. 7:863-867(1994).
 RN [4]
 RP 3D-STRUCTURE MODELING.
 RX MEDLINE=96318252; PubMed=8746786;
 RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
 RT "A three-dimensional model of interferon-tau.";
 RL J. Interferon Cytokine Res. 15:1053-1060(1995).
 RN [5]
 RP REVIEW.
 RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
 RA Martal J.L., Chene N.M., Huynh L.P., L'Hardon R.M., Reinaud P.B.,
 RA Guillomot M.W., Charlier M.A., Charpigny S.Y.;
 RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-ubiquitous expression, structure-function relationships, a pregnancy hormonal embryonic signal and cross-species therapeutic potentialities.";
 RL Biochimie 80:755-777(1998).
 CC -1- FUNCTION: Paracrine hormone primarily responsible for maternal recognition of pregnancy. Interacts with endometrial receptors, probably type I interferon receptors, and blocks estrogen receptor expression, preventing the estrogen-induced increase in oxytocin receptor expression in the endometrium. This results in the suppression of the pulsatile endometrial release of the luteolytic hormone prostaglandin F2-alpha, hindering the regression of the corpus luteum (luteolysis) and therefore a return to ovarian cyclicity. This, and a possible direct effect of IFN-tau on prostaglandin synthesis, leads in turn to continued ovarian progesterone secretion, which stimulates the secretion by the endometrium of the nutrients required for the growth of the conceptus. In summary, displays particularly high antiviral and antiproliferative potency concurrently with particular weak cytotoxicity, high antiluteolytic activity and immunomodulatory properties. In contrast with other IFNs, IFN-tau is not virally inducible.

-1- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

-1- TISSUE SPECIFICITY: Constitutively and exclusively expressed in the mononuclear cells of the extra-embryonic trophoblast.

-1- DEVELOPMENTAL STAGE: Major secretory product synthesized by the sheep conceptus between days 13 and 21 of pregnancy.

-1- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from

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CC duplicate independently in different lineages of the ruminantia.
CC They encode for proteins very similar in sequence but with
CC different biological potency and pattern of expression.
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
CC alphaII subfamily.
CC -----
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CC or send an email to license@isb-sib.ch)
CC -----
CC EMBL; M88771; AA31505.1; -.
CC PIR; I47068; I47068.
CC HSSP; P56828; 1BSL.
CC InterPro; IPR009079; 4 helix cytokine.
CC InterPro; IPR000471; Interferon_abd.
CC Pfam; PF00143; Interferon; 1.
CC PRINTS; PR00266; INTERFERONAB.
CC ProDom; PD000550; Interferon_abd; 1.
CC PROSITE; PS00252; INTERFERON_A_B_D; 1.
CC Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
CC SIGNAL 1 23 By similarity.
CC CHAIN 24 195 Interferon tau-7.
CC DISULFID 24 122 By similarity.
CC DISULFID 52 162 By similarity.
CC SEQUENCE 195 AA; 22223 MW; 1444AEDE80ABAB48 CRC64;
CC -----
CC Query Match 97.0%; Score 880; DB 1; Length 195;
CC Best Local Similarity 96.5%; Pred. No. 1.1e-73;
CC Matches 166; Conservative 4; Mismatches 2; Indels 0; Gaps 0;
Qy 1 CYLSRLMLDARENKLDNRNLSPHSCLDQRKDFGLPQENVEGDQLQKQDAPFLVYEM 60
Db 24 CYLSRLMLDARENKLDNRNLSPHSCLDQRKDFGLPQENVEGDQLQKQDAPFLVYEM 83
Qy 61 LOOSFNLFYTHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMEGESELGKMDPIVTV 120
Db 84 LOOSFNLFYTHSSAAWDTLLLEQLCTGLQQLDHLDTCRGQVMEGESELGKMDPIVTV 143
Qy 121 KVFQGIYDYLQEKGYSCAWEIVVEMNRALTVTTLQKRLTKMGDGLNSP 172
Db 144 KVFQGIHYDYLQEKGYSCAWEIVVEMNRALTSTTLQKRLTKMGDGLNSP 195
RESULT 6
ID INT5 SHEEP STANDARD; PRT; 195 AA.
AC Q28595;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Interferon tau-5 precursor (IFN-tau5) (Trophoblast protein-1)
DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein)
DE (P5).
GN Name=IFNT5;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RX SEQUENCE FROM N.A.
RX MEDLINE=91067497; PubMed=1701245;
RA Klenann S.W., Imakawa K., Roberts R.M.;
RT "Sequence variability among ovine trophoblast interferon cDNA.";
RL Nucleic Acids Res. 18:6724-6724(1990).
RN [2]
RN FUNCTION.
RP MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RX Spencer T.E., Bazer F.W.;

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RT "Ovine interferon tau suppresses transcription of the estrogen
RT receptor and oxytocin receptor genes in the ovine endometrium.";
RN Endocrinology 137:1144-1147(1996).
RL [3]
RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau.";
RL Protein Eng. 7:863-867(1994).
RN [4]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau.";
RL J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [5]
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
RA Gullonot M.W., Charlier M.A., Charpigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
RT ubiquitous expression, structure-function relationships, a pregnancy
RT hormonal embryonic signal and cross-species therapeutic
RT potentialities.";
RL Biochimie 80:755-777(1998).
CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal
CC recognition of pregnancy. Interacts with endometrial receptors,
CC probably type I interferon receptors, and blocks estrogen receptor
CC expression, preventing the estrogen-induced increase in oxytocin
CC receptor expression in the endometrium. This results in the
CC suppression of the pulsatile endometrial release of the luteolytic
CC hormone prostaglandin F2-alpha, hindering the regression of the
CC corpus luteum (luteolysis) and therefore a return to ovarian
CC cyclicity. This, and a possible direct effect of IFN-tau on
CC prostaglandin synthesis, leads in turn to continued ovarian
CC progesterone secretion, which stimulates the secretion by the
CC endometrium of the nutrients required for the growth of the
CC conceptus. In summary, displays particularly high antiviral and
CC antiproliferative potency concurrently with particular weak
CC cytotoxicity, high antiluteolytic activity and immunomodulatory
CC properties. In contrast with other IFNs, IFN-tau is not virally
CC inducible.
CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
CC the mononuclear cells of the extra-embryonic trophoctoderm.
CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
CC sheep conceptus between days 13 and 21 of pregnancy.
CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
CC IFN-omega genes in the ruminantia suborder and have continued to
CC duplicate independently in different lineages of the ruminantia.
CC They encode for proteins very similar in sequence but with
CC different biological potency and pattern of expression.
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
CC alphaII subfamily.
CC -----
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CC -----
CC EMBL; X56342; CAA39782.1; -.
CC HSSP; P56828; 1BSL.
CC InterPro; IPR009079; 4 helix cytokine.
CC InterPro; IPR000471; Interferon_abd.
CC Pfam; PF00143; Interferon; 1.
CC PRINTS; PR00266; INTERFERONAB.
CC ProDom; PD000550; Interferon_abd; 1.
CC PROSITE; PS00252; INTERFERON_A_B_D; 1.
CC Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
KW

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FT SIGNAL 1 23 By similarity.
FT CHAIN 24 195 Interferon tau-5.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
SQ SEQUENCE 195 AA; 22163 MW; 14EA9038CB60A562 CRC64;
Query Match 96.7%; Score 877; DB 1; Length 195;
Best Local Similarity 95.9%; Pred. NO. 2e-73;
Matches 165; Conservative 6; Mismatches 1; Indels 0; Gaps 0;
QY 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKQDQAFPLYEM 60
DB 24 CYLSQRMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKQDQAFPLYEM 83
QY 61 LOOSFNLFTYTHSSAAWDTTLEQLCTGLQOQLDHLDTCRGQVMEGDESELGNMDDPIVTV 120
DB 84 LOOSFNLFTYTHSSAAWDTTLEQLCTGLQOQLDHLDTCRDQVMEGDESELGNVDPIVTV 143
QY 121 KKYFQGIYDYLQEKGYSCDCAWEIVRVMRALTVTSTLQKRLTKMGDDLNSP 172
DB 144 KKYFQGIHYDYLQEKGYSCDCAWEIVRVMRALTVTSTLQKRLTKMGDDLNSP 195
RESULT 7
INT9 SHEEP STANDARD; PRT; 195 AA.
AC Q08070;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Interferon tau-9 precursor (IFN-tau9) (Trophoblast protein-1) (TP-1)
DE (Trophoblastin) (Antitileolysin) (Trophoblast antitileolytic protein)
DE (TP-010).
GN Name-IFNT9;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]_TaxID=9940;
RP SEQUENCE FROM N.A.
RC TISSUE=Trophoctoderm;
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Nephew K.P., Whaley A.E., Christenson R.K., Imakawa K.;
RT "Differential expression of distinct mRNAs for ovine trophoblast
RT protein-1 and related sheep type I interferons."
RL Biol. Reprod. 48:768-778(1993).
RN [2]
RP FUNCTION.
RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
RA Spencer T.E., Bazer F.W.;
RT "Ovine interferon tau suppresses transcription of the estrogen
RT receptor and oxytocin receptor genes in the ovine endometrium."
RL Endocrinology 137:1144-1147(1996).
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RX MEDLINE=95062134; PubMed=7971949;
RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
RA Krishna N.R., Pontzer C.H.;
RT "Predicted structural motif of IFN tau."
RL Protein Eng. 7:863-867(1994).
RN [4]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=96318252; PubMed=8746786;
RA Senda T., Saitoh S.-I., Mitui Y., Li J., Roberts R.M.;
RT "A three-dimensional model of interferon-tau."
RL J. Interferon Cytokine Res. 15:1053-1060(1995).
RN [5]
RP REVIEW.
RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
RA Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
RA Guillomot M.W., Charlier M.A., Chapigny S.Y.;
RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
```

```
RT ubiquitous expression, structure-function relationships, a pregnancy
RT hormonal embryonic signal and cross-species therapeutic
RL Biochimie 80:755-777(1998).
CC -I- FUNCTION: Paracrine hormone primarily responsible for maternal
CC recognition of pregnancy. Interacts with endometrial receptors,
CC probably type I interferon receptors, and blocks estrogen receptor
CC expression, preventing the estrogen-induced increase in oxytocin
CC receptor expression in the endometrium. This results in the
CC suppression of the pulsatile endometrial release of the luteolytic
CC hormone prostaglandin F2-alpha, hindering the regression of the
CC corpus luteum (luteolysis) and therefore a return to ovarian
CC cyclicity. This, and a possible direct effect of IFN-tau on
CC prostaglandin synthesis, leads in turn to continued ovarian
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CC conceptus. In summary, displays particularly high antiviral and
CC antiproliferative potency concurrently with particular weak
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CC properties. In contrast with other IFNs, IFN-tau is not virally
CC inducible.
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CC -I- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
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CC -I- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
CC sheep conceptus between days 13 and 21 of pregnancy.
CC -I- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
CC IFN-omega genes in the ruminantia suborder and have continued to
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CC They encode for proteins very similar in sequence but with
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CC -----
CC EMBL; M88773; AAA31503.1; -.
DR PIR; I47066; I47066.
DR HSP; P56828; IBSL.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR000471; Interferon_abd.
DR Pfam; PF00143; Interferon; 1.
DR PRINTS; P00286; INTERFERONAB.
DR PRODOM; P000550; Interferon_abd; 1.
DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW Antiviral; Cytokine; Hormone; Multigene family; Pregnancy; Signal.
FT SIGNAL 1 23 By similarity.
FT CHAIN 24 195 Interferon tau-9.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
SQ SEQUENCE 195 AA; 22127 MW; 00DE9CB089D98493 CRC64;
Query Match 95.7%; Score 868; DB 1; Length 195;
Best Local Similarity 95.3%; Pred. No. 1.4e-72;
Matches 164; Conservative 6; Mismatches 2; Indels 0; Gaps 0;
QY 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKQDQAFPLYEM 60
DB 24 CYLSQRMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKQDQAFPLYEM 83
QY 61 LOOSFNLFTYTHSSAAWDTTLEQLCTGLQOQLDHLDTCRGQVMEGDESELGNMDDPIVTV 120
DB 84 LOOSFNLFTYTHSSAAWDTTLEQLCTGLQOQLDHLDTCRGQVMEGDESELGNMDDPIVTV 143
QY 121 KKYFQGIYDYLQEKGYSCDCAWEIVRVMRALTVTSTLQKRLTKMGDDLNSP 172
DB 144 KKYFQGIHYDYLQEKGYSCDCAWEIVRVMRALTVTSTLQKRLTKMGDDLNSP 195
```


"Genes for the trophoblast interferons in sheep, goat, and musk ox and distribution of related genes among mammals.";
J. Interferon Res. 12:1-11(1992).

[2]

REVIEW.
MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
Guillomot M.W., Charlier M.A., Charpigny S.Y.;
"IFN-tau, a novel subtype I IFN1. Structural characteristics, non-ubiquitous expression, structure-function relationships, a pregnancy hormonal embryonic signal and cross-species therapeutic potentialities.";
Biochimie 80:755-777(1998).

-I- FUNCTION: Paracrine hormone primarily responsible for maternal recognition of pregnancy. Interacts with endometrial receptors, probably type I interferon receptors, and blocks estrogen receptor expression, preventing the estrogen-induced increase in oxytocin receptor expression in the endometrium. This results in the suppression of the pulsatile endometrial release of the luteolytic hormone prostaglandin F2-alpha, hindering the regression of the corpus luteum (luteolysis) and therefore a return to ovarian cyclicity. This, and a possible direct effect of IFN-tau on prostaglandin synthesis, leads in turn to continued ovarian progesterone secretion, which stimulates the secretion by the endometrium of the nutrients required for the growth of the conceptus. In summary, displays particularly high antiviral and antiproliferative potency concurrently with particular weak cytotoxicity, high antiluteolytic activity and immunomodulatory properties. In contrast with other IFNs, IFN-tau is not virally inducible.

-I- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

-I- TISSUE SPECIFICITY: Constitutively and exclusively expressed in the mononuclear cells of the extra-embryonic trophoblast.

-I- DEVELOPMENTAL STAGE: Major secretory product synthesized by the conceptus during a very short period in early pregnancy.

-I- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from IFN-omega genes in the ruminantia suborder and have continued to duplicate independently in different lineages of the ruminantia. They encode for proteins very similar in sequence but with different biological potency and pattern of expression.

-I- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-alpha11 subfamily.

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EMBL; M73243; AAA30907.1; --

PIR; I46272; I46272.

HSSP; PS6828; IBSL.

InterPro; IPR009079; 4 helix cytokine.

InterPro; IPR000471; Interferon_abd.

Pfam; PF00143; Interferon; 1.

PRINTS; PR00266; INTERFERONAB.

PRODom; PD000550; Interferon abd; 1.

PROSITE; PS00252; INTERFERON_A_B_D; 1.

Antiviral; Cytokine; Hormone; Pregnancy; Signal.

SIGNAL 1 23 By similarity.

CHAIN 24 195 Interferon tau.

DISULFID 24 122 By similarity.

DISULFID 52 162 By similarity.

SEQUENCE 195 AA; 22172 MW; 049F91D3E1CDB67 CRC64;

Query Match 93.3%; Score 846; DB 1; Length 195;

Best Local Similarity 93.6%; Pred.No. 1.5e-70;

Matches 161; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

1 CYLSRLMLDARENLLDRMRLSPHSCLDRKDFGLPQEMVEGDQLQKQDAPFVLYEM 60

|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||

Db 24 CYLSRLMLDARENLLDRMRLSPHSCLDRKDFGLPQEMVEGDQLQKQDAPFVLYEM 83
Qy 61 LOOSFNLFYTHSSAAWDTTLLEQLCTGLQOQLDHLDTCRGQVMGESELSGNMDPIVTV 120
Db 84 LOOSFNLFYTHSSAAWDTTLLEQLCTGLQOQLDHLDTCRGQVMGESELSGNMDPIVTV 143
Qy 121 KKYFGQIYDYIQEKGYSICAMEIVRVMRALTSTTTLQKRLTKMGDDLNSP 172
Db 144 KKYFGQIYDYIQEKGYSICAMEIVRVMRALTSTTTLQKRLTKMGDDLNSP 195

RESULT 10

INT6 SHEEP

ID INT6 SHEEP STANDARD; PRT; 195 AA.

AC Q29429;

DT 30-MAY-2000 (Rel. 39, Created)

DT 30-MAY-2000 (Rel. 39, Last sequence update)

DT 05-JUL-2004 (Rel. 44, Last annotation update)

DE Interferon tau-6 precursor (IFN-tau6) (Trophoblast protein-1) (TP-1)

DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein).

GN Name=IFNT6;

OS Ovis aries (Sheep).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

OC Caprinae; Ovis.

OX NCBI_TaxID=9940;

RP SEQUENCE FROM N.A. (IFN-TAU6D).

RC TISSUE=Embryo;

RX MEDLINE=91067497; PubMed=1701245;

RA Klemann S.W., Imakawa K., Roberts R.M.;

RT "Sequence variability among ovine trophoblast interferon cDNA.";

RL Nucleic Acids Res. 18:6724-6724(1990).

RN [2]

RP SEQUENCE FROM N.A. (IFN-TAU6D).

RA Roberts R.M.;

RL Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.

RN [3]

RP SEQUENCE OF 24-195 FROM N.A. (IFN-TAU6A; IFN-TAU6B AND IFN-TAU6C).

RC TISSUE=Embryo;

RA Winkelman G.L., Roberts R.M., Peterson A.J., Alexenko A.P., Ealy A.D.;

RT "Identification of the expressed forms of ovine interferon-tau in the

RT perimplantation conceptus: sequence relationships and comparative

RL biological activities.";

RN Submitted (JUN-1999) to the EMBL/GenBank/DBJ databases.

RP FUNCTION.

RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;

RA Spencer T.E., Bazer F.W.;

RT "Ovine interferon tau suppresses transcription of the estrogen

RT receptor and oxytocin receptor genes in the ovine endometrium.";

RL Endocrinology 137:1144-1147(1996).

RN [5]

RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.

RX MEDLINE=95062134; PubMed=7971949;

RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,

RT Krishna N.R., Pontzer C.H.;

RT "Predicted structural motif of IFN tau.";

RL Protein Eng. 7:863-867(1994).

RN [6]

RP 3D-STRUCTURE MODELING.

RX MEDLINE=96318252; PubMed=8746786;

RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;

RT "A three-dimensional model of interferon-tau.";

RL J. Interferon Cytokine Res. 15:1053-1060(1995).

RN [7]

RP REVIEW.

RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;

RA Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,

RA Guillomot M.W., Charlier M.A., Charpigny S.Y.;

RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-

RT ubiquitous expression, structure-function relationships, a pregnancy

RT hormonal embryonic signal and cross-species therapeutic

RT

RT potentialities.";

RL Biochimie 80:755-777(1998).

CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal

CC recognition of pregnancy. Interacts with endometrial receptors,

CC probably type I interferon receptors, and blocks estrogen receptor

CC expression, preventing the estrogen-induced increase in oxytocin

CC receptor expression in the endometrium. This results in the

CC suppression of the pulsatile endometrial release of the luteolytic

CC hormone prostaglandin F2-alpha, hindering the regression of the

CC corpus luteum (luteolysis) and therefore a return to ovarian

CC cyclicity. This, and a possible direct effect of IFN-tau on

CC prostaglandin synthesis, leads in turn to continued ovarian

CC progesterone secretion, which stimulates the secretion by the

CC endometrium of the nutrients required for the growth of the

CC conceptus. In summary, displays particularly high antiviral and

CC antiproliferative potency concurrently with particular weak

CC cytotoxicity, high antiluteolytic activity and immunomodulatory

CC properties. In contrast with other IFNs, IFN-tau is not virally

CC inducible.

CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.

CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in

CC the mononuclear cells of the extra-embryonic trophoctoderm.

CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the

CC sheep conceptus between days 13 and 21 of pregnancy.

CC -!- POLYMORPHISM: There seems to be four variants of IFN-tau 6:

CC A/P6V3, B/P6V2, C/P6V1 and D/P6/P12 (shown here).

CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from

CC IFN-omega genes in the ruminantia suborder and have continued to

CC duplicate independently in different lineages of the ruminantia.

CC They encode for proteins very similar in sequence but with

CC different biological potency and pattern of expression.

CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-

CC alphaii subfamily.

CC -----

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CC or send an email to license@isb-sib.ch).

CC -----

DR EMBL; X56343; CAA39783.1; -.

DR EMBL; X56346; CAA39786.1; -.

DR EMBL; AF158823; AAD44975.1; -.

DR EMBL; AF158822; AAD44974.1; -.

DR EMBL; AF158821; AAD44973.1; -.

DR PIR; A61455; A61455.

DR HSSP; P56828; IBSL.

DR InterPro; IPR009079; 4 helix cytokine.

DR InterPro; IPR000471; Interferon_abd; 1.

DR Pfam; PF00143; Interferon; 1.

DR PRINTS; PR00286; INTERFERONAB.

DR ProDom; PD000550; Interferon_abd; 1.

DR PROSITE; PS00252; INTERFERON_A_B_D; 1.

KW Antiviral; Cytokine; Glycoprotein; Hormone; Multigene family;

KW Polymorphism; Pregnancy; Signal.

FT SIGNAL 1 23 By similarity.

FT CHAIN 24 195 Interferon tau-6.

FT DISULFID 24 122 By similarity.

FT DISULFID 52 162 By similarity.

FT CARBOHYD 101 101 N-linked (GlcNAc...) (Potential).

FT VARIANT 130 130 K -> E (in IFN-tau6A and IFN-tau6B).

FT VARIANT 136 136 K -> N (in IFN-tau6A, IFN-tau6B and IFN-

FT tau6C).

FT VARIANT 188 188 T -> M (in IFN-tau6A).

FT SEQUENCE 195 AA; 22102 MW; C8428392E78CA387 CRC64;

Query Match 92.8%; Score 842; DB 1; Length 195;

Best Local Similarity 93.0%; Pred No. 3.6e-70;

Matches 160; Conservative 6; Mismatches 6; Indels 0; Gaps 0;

Qy 1 CYLSRKLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVSGDQLQKQDAFPVLYEM 60

Db 24 CYLSRKLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVSGDQLQKQDAFPVLYEM 83

Qy 61 LQQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRQVNMGEEDSELGNMDPIVTV 120

Db 84 LQQSFNLFYTEHSSAAWNTTLLLEQLCTGLQQLDHLDTCRQVNMGEKDELGKMDPIVTV 143

Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTTLQKRLTKMGDGLNSP 172

Db 144 KKYFGIHDYLOEKGYSDCAWEIVRVMRALTSTTTLQKRLTKMGDGLNSP 195

RESULT 11

Q6UZ49 PRELIMINARY; PRT; 195 AA.

ID Q6UZ49

AC Q6UZ49;

DT 05-JUL-2004 (TrEMBLrel. 27, Created)

DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)

DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)

DE Interferon-tau 3.

OS Capra hircus (Goat).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;

OC Caprinae; Capra.

OX NCBI_TaxID=9925;

RN [1]

RP SEQUENCE FROM N.A.

RA Ealy A.D., Wagner S.K., Sheils A.E., Whitley N.C., Kiesling D.O.,

RA Barbato G.F.;

RL Submitted (JUL-2003) to the EMBL/GenBank/DBJ databases.

CC -!- SIMILARITY: Belongs to the alpha/beta interferon family.

DR EMBL; AY357329; AAQ56198.1; -.

DR HSSP; P56828; IBSL.

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. .); IEA.

DR GO; GO:0006952; P:defense response; IEA.

DR InterPro; IPR009079; 4 helix cytokine.

DR InterPro; IPR000471; Interferon_abd.

DR Pfam; PF00143; Interferon; 1.

DR PRINTS; PR00286; INTERFERONAB.

DR ProDom; PD000550; Interferon_abd; 1.

DR SMART; SM00076; IFabd; 1.

DR PROSITE; PS00252; INTERFERON_A_B_D; 1.

KW Antiviral; Cytokine.

SQ SEQUENCE 195 AA; 22294 MW; 323B782D1D16E69E CRC64;

Query Match 91.5%; Score 830; DB 2; Length 195;

Best Local Similarity 92.4%; Pred. No. 4.7e-69;

Matches 159; Conservative 6; Mismatches 7; Indels 0; Gaps 0;

Qy 1 CYLSRKLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVSGDQLQKQDAFPVLYEM 60

Db 24 CYLSRKLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVSGDQLQKQDAFPVLYEM 83

Qy 61 LQQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRQVNMGEEDSELGNMDPIVTV 120

Db 84 LQQSFNLFYTEHSSAAWNTTLLLEQLCTGLQQLDHLDTCRQVNMGEKDELGKMDPIVTV 143

Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTSTTTLQKRLTKMGDGLNSP 172

Db 144 KKYFGIHDYLOEKGYSDCAWEIVRVMRALTSTTTLQKRLTKMGDGLNSP 195

RESULT 12

Q6UZ50 PRELIMINARY; PRT; 195 AA.

ID Q6UZ50

AC Q6UZ50;

DT 05-JUL-2004 (TrEMBLrel. 27, Created)

DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)

DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)

DE Interferon-tau 2b (Interferon-tau 2a).

OS Capra hircus (Goat).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Euthera; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Capra.
 OX NCBI_TaxID=9925;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Early A.D., Wagner S.K., Sheils A.E., Whitley N.C., Kiesling D.O.,
 RA Barbato G.F.;
 RL Submitted (JUL-2003) to the EMBL/GenBank/DBJ databases.
 CC -1- SIMILARITY: Belongs to the alpha/beta interferon family.
 DR EMBL: AV357328; RAQ56197.1; -;
 DR EMBL: AV357327; RAQ56196.1; -;
 DR HSSP: P56828; 1B5L.
 DR GO: GO:0005576; C:extracellular; IEA.
 DR GO: GO:0005126; F:hematopoietin/interferon-class (D200-domain...); IEA.
 DR GO: GO:0006952; P:defense response; IEA.
 DR InterPro: IPR009079; 4_helix_cytokine.
 DR InterPro: IPR000471; Interferon_abd.
 DR Pfam: PF00143; Interferon; 1.
 DR PRINTS: PR00266; INTERFERONAB.
 DR ProDom: PD000550; Interferon_abd; 1.
 DR SMART: SM00076; IFab; 1.
 DR PROSITE: PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine.
 SQ SEQUENCE 195 AA; 22313 MW; C99AC236A716F654 CRC64;
 Query Match 91.5%; Score 830; DB 2; Length 195;
 Best Local Similarity 92.4%; Pred. No. 4.7e-69;
 Matches 159; Conservative 6; Mismatches 7; Indels 0; Gaps 0;
 QY 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFPVLYEM 60
 DB 24 CYLSRRLMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFVLYEM 83
 QY 61 LQOSFNLFYTEHSSAAWDTTLEQLCTGLOQLDHLDTCRGQVMGEEDSELGNMDDIVTV 120
 DB 84 LQOTFNLFYTEHSSAAWDTTLEQLRTGLQOQLDHLDTCRGPMVGEKDELGNMDDIVTV 143
 QY 121 KVFQGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172
 DB 144 KYFQGIHYDLQEKYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 195
 RESULT 13
 Q6RFZ8 PRELIMINARY; PRT; 172 AA.
 AC Q6RFZ8
 DT 05-JUL-2004 (TrEMBLrel. 27, Created)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
 DE Interferon tau (Fragment).
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Euthera; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Wang X., Wang M., Xia C., Zhu D., Liou C., Bai Y.;
 RL Submitted (DEC-2003) to the EMBL/GenBank/DBJ databases.
 CC -1- SIMILARITY: Belongs to the alpha/beta interferon family.
 DR EMBL: AY499657; AAR85892.1; -;
 DR HSSP: P56828; 1B5L.
 DR GO: GO:0005576; C:extracellular; IEA.
 DR GO: GO:0005126; F:hematopoietin/interferon-class (D200-domain...); IEA.
 DR InterPro: IPR009079; 4_helix_cytokine.
 DR InterPro: IPR000471; Interferon_abd.
 DR Pfam: PF00143; Interferon; 1.
 DR PRINTS: PR00266; INTERFERONAB.
 DR ProDom: PD000550; Interferon_abd; 1.
 DR SMART: SM00076; IFab; 1.
 DR PROSITE: PS00252; INTERFERON_A_B_D; 1.
 KW Antiviral; Cytokine.

FT NON TER 1
 SQ SEQUENCE 172 AA; 19992 MW; 65984B2F91335046 CRC64;
 Query Match 90.0%; Score 816; DB 2; Length 172;
 Best Local Similarity 91.3%; Pred. No. 8e-66;
 Matches 157; Conservative 7; Mismatches 8; Indels 0; Gaps 0;
 QY 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFPVLYEM 60
 DB 1 CYLSRQLMLDARENKLLDRMNRSLPHSCLOQRKDFGLPQEMVEGDLQKDAFVLYEM 60
 QY 61 LQOSFNLFYTEHSSAAWDTTLEQLCTGLOQLDHLDTCRGQVMGEEDSELGNMDDIVTV 120
 DB 61 LQOTFNLFYTEHSSAAWDTTLEQLRTGLQOQLDHLDTCRGPMVGEKDELGNMDDIVTV 120
 QY 121 KVFQGIYDYLQEKGYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172
 DB 121 KYFQGIHYDLQEKYSDCAWEIVRVMRALTSTTLQKRLTKMGDDLNSP 172
 RESULT 14
 INTA SHEEP STANDARD; PRT; 195 AA.
 ID INTA SHEEP
 AC Q08053;
 DT 30-MAY-2000 (Rel. 39, Created)
 DT 30-MAY-2000 (Rel. 39, Last sequence update)
 DT 05-JUL-2004 (Rel. 44, Last annotation update)
 DE Interferon tau-10 precursor (IFN-tau10) (Trophoblast protein-1) (TP-1)
 DE (Trophoblastin) (Antiluteolysin) (Trophoblast antiluteolytic protein)
 DE (TP-02).
 GN Name=IFNT10;
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Euthera; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Trophoctoderm;
 RX MEDLINE=93250155; PubMed=8485241;
 RA Nephew K.P., Whaley A.E., Christenson R.K., Imakawa K.;
 RT "Differential expression of distinct mRNAs for ovine trophoblast
 RT protein-1 and related sheep type I interferons.";
 RL Biol. Reprod. 48:768-778(1993).
 RN [2]
 RP FUNCTION.
 RX MEDLINE=96174804; PubMed=8603586; DOI=10.1210/en.137.3.1144;
 RA Spencer T.E., Bazer F.W.;
 RT "Ovine interferon tau suppresses transcription of the estrogen
 RT receptor and oxytocin receptor genes in the ovine endometrium.";
 RL Endocrinology 137:1144-1147(1996).
 RN [3]
 RP CIRCULAR DICHOISM ANALYSIS, AND 3D-STRUCTURE MODELING.
 RX MEDLINE=95062134; PubMed=7971949;
 RA Jarpe M.A., Johnson H.M., Bazer F.W., Ott T.L., Curto E.V.,
 RA Krishna N.R., Pontzer C.H.;
 RT "Predicted structural motif of IFN tau.";
 RL Protein Eng. 7:863-867(1994).
 RN [4]
 RP 3D-STRUCTURE MODELING.
 RX MEDLINE=96318252; PubMed=8746786;
 RA Senda T., Saitoh S.-I., Mitsui Y., Li J., Roberts R.M.;
 RT "A three-dimensional model of interferon-tau.";
 RL J. Interferon Cytokine Res. 15:1053-1060(1995).
 RN [5]
 RP REVIEW.
 RX MEDLINE=99081096; PubMed=9865498; DOI=10.1016/S0300-9084(99)80029-7;
 RA Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
 RA Guillomot M.W., Charlier M.A., Charpigny S.Y.;
 RT "IFN-tau: a novel subtype I IFN1. Structural characteristics, non-
 RT ubiquitous expression, structure-function relationships, a pregnancy
 RT hormonal embryonic signal and cross-species therapeutic
 RT potentialities.";

```

RL Biochimie 80:755-777(1998).
CC -!- FUNCTION: Paracrine hormone primarily responsible for maternal
CC recognition of pregnancy. Interacts with endometrial receptors,
CC probably type I interferon receptors, and blocks estrogen receptor
CC expression, preventing the estrogen-induced increase in oxytocin
CC receptor expression in the endometrium. This results in the
CC suppression of the pulsatile endometrial release of the luteolytic
CC hormone prostaglandin F2-alpha, hindering the regression of the
CC corpus luteum (luteolysis) and therefore a return to ovarian
CC cyclicity. This, and a possible direct effect of IFN-tau on
CC prostaglandin synthesis, leads in turn to continued ovarian
CC endometrium secretion, which stimulates the secretion by the
CC progesterone of the nutrients required for the growth of the
CC conceptus. In summary, displays particularly high antiviral and
CC antiproliferative potency concurrently with particularly weak
CC cytotoxicity, high antiluteolytic activity and immunomodulatory
CC properties. In contrast with other IFNs, IFN-tau is not vitally
CC inducible.
CC -!- SUBCELLULAR LOCATION: Secreted into the uterine lumen.
CC -!- TISSUE SPECIFICITY: Constitutively and exclusively expressed in
CC the mononuclear cells of the extra-embryonic trophoctoderm.
CC -!- DEVELOPMENTAL STAGE: Major secretory product synthesized by the
CC sheep conceptus between days 13 and 21 of pregnancy.
CC -!- MISCELLANEOUS: IFN-tau genes are intronless. They evolved from
CC IFN-omega genes in the ruminantia suborder and have continued to
CC duplicate independently in different lineages of the ruminantia.
CC They encode for proteins very similar in sequence but with
CC different biological potency and pattern of expression.
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family. IFN-
CC alpha1 subfamily.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; M88770; AAA31504.1; -
DR PIR; I47067; I47067.
DR HSSP; P56828; 1B5L.
DR InterPro; IPR009079; 4 helix_cytokine.
DR InterPro; IPR000471; Interferon_abd.
DR Pfam; PF00143; Interferon; 1.
DR PRINTS; PR00266; INTERFERONAB.
DR PRODOM; PD000550; Interferon_abd; 1.
DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
DR Antiviral; Cytokine; Glycoprotein; Hormone; Multigene family;
KW pregnancy; Signal.
FT SIGNAL 1 23 By similarity.
FT CHAIN 24 195 Interferon tau-10.
FT DISULFID 24 122 By similarity.
FT DISULFID 52 162 By similarity.
FT CARBOHYD 101 101 N-linked (GlcNAc...) (Potential).
SQ SEQUENCE 195 AA; 22069 MW; 16084C3184AC3963 CRC64;

Query Match 88.9%; Score 806; DB 1; Length 195;
Best Local Similarity 89.5%; Pred. No. 7.9e-67;
Matches 154; Conservative 9; Mismatches 9; Indels 0; Gaps 0;

Qy 1 CYLSRKLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKDOAFPVLVYM 60
Db 24 CYLSRRLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKDOAFPVLVYM 83

Qy 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 84 LQOSFNLFHTERSAAWNTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 143

Qy 121 KKYFGQIYDYLOEKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKMGGLNSP 172
Db 144 KKYFGQIHIDYLOEKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKMGGLNSP 195

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RESULT 15
Q6UZ47 PRELIMINARY; PRT; 195 AA.
AC Q6UZ47;
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Interferon-tau 4b (interferon-tau 4c) (interferon-tau 4d) (Interferon-
DE tau 4e) (interferon-tau 4a).
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprinae; Capra.
OX NCBI_taxid=9925;
RN [1]
RP SEQUENCE FROM N.A.
RA Ealy A.D., Wagner S.K., Sheils A.E., Whitley N.C., Kiesling D.O.,
RA Barbato G.F.
RL Submitted (JUL-2003) to the EMBL/GenBank/DBJ databases.
CC -!- SIMILARITY: Belongs to the alpha/beta interferon family.
DR EMBL; AY357331; AAQ56200.1; -
DR EMBL; AY357332; AAQ56201.1; -
DR EMBL; AY357333; AAQ56202.1; -
DR EMBL; AY357334; AAQ56203.1; -
DR EMBL; AY357330; AAQ56199.1; -
DR HSSP; P56828; 1B5L.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005126; P:hematopoietin/interferon-class (D200-domain. .; IEA.
DR GO; GO:0006952; P:defense response; IEA.
DR InterPro; IPR009079; 4 helix_cytokine.
DR InterPro; IPR000471; Interferon_abd.
DR Pfam; PF00143; Interferon; 1.
DR PRINTS; PR00266; INTERFERONAB.
DR PRODOM; PD000550; Interferon_abd; 1.
DR SMART; SM00076; IFabd; 1.
DR PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW Antiviral; Cytokine.
SQ SEQUENCE 195 AA; 22354 MW; D364AC9A972D8FC4 CRC64;

Query Match 88.6%; Score 804; DB 2; Length 195;
Best Local Similarity 90.1%; Pred. No. 1.2e-66;
Matches 155; Conservative 8; Mismatches 9; Indels 0; Gaps 0;

Qy 1 CYLSRKLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKDOAFPVLVYM 60
Db 24 CYLSRRLMLDARENILKLLDRNRLSPHSCLODRKDFGLPQEMVEGDQLQKDOAFPVLVYM 83

Qy 61 LQOSFNLFYTEHSSAAWDTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 84 LQOTFNLFHTERSAAWNTLLLEQLHTGLQOQLDHLDTCRGLVMGEKDSLGKMDPIVTV 143

Qy 121 KKYFGQIYDYLOEKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKMGGLNSP 172
Db 144 KKYFGQIHIDYLOEKGYSDCAWEIVRVMEMRALTVSTTLQKRLTKMGGLNSP 195

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Search completed: October 28, 2005, 14:59:57
Job time : 117.5 secs

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/029,890
FILING DATE: 21-Dec-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/616,904
FILING DATE: 15-MAR-1996
ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
REGISTRATION NUMBER: 38,615
REFERENCE/DOCKET NUMBER: 5600-0003
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-324-0880
TELEFAX: 415-324-0960
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 172 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: amino acid sequence of a mature
Ov1Fntau protein
SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-10-029-890-2

Query Match 99.1%; Score 899; DB 14; Length 172;
Best Local Similarity 98.8%; Pred. No. 9.9e-88;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Qy 1 CYLSERLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKDAQFPVLYEM 60
Db 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKDAQFPVLYEM 60
Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVENMRALTVSTTLQKRLTKMGGLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVENMRALTVSTTLQKRLTKMGGLNSP 172

RESULT 15
US-10-346-269-2
Sequence 2, Application US/10346269
Publication No. US20030219405A1
GENERAL INFORMATION:
APPLICANT: Sokawa, Yoshihiro
APPLICANT: Liu, Chih-Ping
TITLE OF INVENTION: Oral Administration of Interferon-tau
FILE REFERENCE: 55600.8009.US00
CURRENT APPLICATION NUMBER: US/10/346,269
CURRENT FILING DATE: 2003-01-16
PRIOR APPLICATION NUMBER: US 60/349,658
PRIOR FILING DATE: 2002-01-16
NUMBER OF SEQ ID NOS: 3
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 2
LENGTH: 172
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: amino acid encoded by SEQ ID NO:1
US-10-346-269-2

Query Match 99.1%; Score 899; DB 15; Length 172;
Best Local Similarity 98.8%; Pred. No. 9.9e-88;

Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Qy 1 CYLSERLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKDAQFPVLYEM 60
Db 1 CYLSRKLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKDAQFPVLYEM 60
Qy 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Db 61 LQOSFNLFYTEHSSAAWDTTLLLEQLCTGLQOQLDHLDTCRGQVMGEEDSELGNMDPIVTV 120
Qy 121 KKYFGIYDYLQEKGYSDCAWEIVRVENMRALTVSTTLQKRLTKMGGLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVENMRALTVSTTLQKRLTKMGGLNSP 172

Search completed: October 28, 2005, 15:05:44
Job time : 117 secs

Db 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDFIVT 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
RESULT 12
US-09-746-919-2
; Sequence 2, Application US/09746919
; Patent No. US20020013452A1
; GENERAL INFORMATION:
; APPLICANT: Johnson, Howard M.
; APPLICANT: Pontzer, Carol H.
; TITLE OF INVENTION: Interferon Tau Compositions and
; TITLE OF INVENTION: Methods of Use
; NUMBER OF SEQUENCES: 44
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/746,919
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/045,467
; FILING DATE:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/438,753
; FILING DATE: 10-MAY-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/139,891
; FILING DATE: 19-OCT-1993
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/847,741
; FILING DATE: 09-MAR-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/318,050
; FILING DATE: 02-MAR-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/969,890
; FILING DATE: 30-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Dehlinger, Peter J.
; REGISTRATION NUMBER: 28,006
; REFERENCE/DOCKET NUMBER: 5600-0001.36
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 172 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: amino acid sequence of a mature
; INDIVIDUAL ISOLATE: OviFtau protein
US-09-746-919-2
Query Match 99.1%; Score 899; DB 9; Length 172;
Best Local Similarity 98.8%; Pred. No. 9.9e-88;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 CYLSERLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 60
Db 1 CYLSERLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 60
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDFIVT 120
Db 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDFIVT 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
RESULT 13
US-09-910-406C-2
; Sequence 2, Application US/09910406C
; Publication No. US20030049277A1
; GENERAL INFORMATION:
; APPLICANT: Sokawa, Yoshiro
; APPLICANT: Liu, Chih-Ping
; TITLE OF INVENTION: Composition for Treatment of and Method
; TITLE OF INVENTION: of Monitoring Hepatitis C Virus Using Interferon-tau
; FILE REFERENCE: 5600-0004.30
; CURRENT APPLICATION NUMBER: US/09/910,406C
; CURRENT FILING DATE: 2002-07-02
; PRIOR APPLICATION NUMBER: JP 317160
; PRIOR FILING DATE: 2000-10-17
; PRIOR APPLICATION NUMBER: US 60/219,128
; PRIOR FILING DATE: 2000-07-19
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Ovis Aries
US-09-910-406C-2
Query Match 99.1%; Score 899; DB 10; Length 172;
Best Local Similarity 98.8%; Pred. No. 9.9e-88;
Matches 170; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 CYLSERLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 60
Db 1 CYLSERLMLDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQDQAFPVLYEM 60
QY 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDFIVT 120
Db 61 LQOSFNLFTYHSSAAWDTTLLLEQLCTGLQQQLDHLDTCRGQVMGEEDSELGNMDFIVT 120
QY 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
Db 121 KKYFGIYDYLQEKGYSDCAWEIVRVMRALTTSVTTLOKRLTKMGDDLNSP 172
RESULT 14
US-10-029-890-2
; Sequence 2, Application US/10029890
; Publication No. US20030012766A1
; GENERAL INFORMATION:
; APPLICANT: Soos, Jeanne M.
; Schiftenbauer, Joel
; Johnson, Howard M.
; TITLE OF INVENTION: Orally-Administered Interferon-Tau
; Compositions and Methods
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306

Db 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSCAWEIVRVMRALTSTTLLQKRLTKMGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSCAWEIVRVMRALTSTTLLQKRLTKMGDLNSP 172
RESULT 9
US-10-991-653-3
; Sequence 3, Application US/10991653
; Publication No. US20050147588A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Lopez, Henry W.
; TITLE OF INVENTION: Methods for Treatment of Obesity and for Promotion of Weight Loss
; CURRENT APPLICATION NUMBER: US/10/991,653
; PRIOR FILING DATE: 2004-11-17
; PRIOR APPLICATION NUMBER: US 60/523,077
; PRIOR FILING DATE: 2003-11-17
; PRIOR APPLICATION NUMBER: US 60/532,851
; PRIOR FILING DATE: 2003-12-24
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: Recombinant IFNTau Based on Ovis Aries Sequence
US-10-991-653-3
Query Match 100.0%; Score 907; DB 18; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CYLSERLMDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
Db 1 CYLSERLMDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
QY 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
Db 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSCAWEIVRVMRALTSTTLLQKRLTKMGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSCAWEIVRVMRALTSTTLLQKRLTKMGDLNSP 172
RESULT 10
US-11-078-608-3
; Sequence 3, Application US/11078608
; Publication No. US20050201981A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Villarete, Lorelie H.
; APPLICANT: Kironon, Stephen N.
; TITLE OF INVENTION: Method of Optimizing Treatment with Interferon-Tau
; FILE REFERENCE: 55600-8014.US06
; CURRENT APPLICATION NUMBER: US/11/078,608
; PRIOR FILING DATE: 2005-03-10
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; PRIOR APPLICATION NUMBER: US 10/824,710
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 10/825,068
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 10/825,382
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 10/825,457
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 10/884,741
; PRIOR FILING DATE: 2004-07-02

; PRIOR APPLICATION NUMBER: US 11/040,706
; PRIOR FILING DATE: 2005-01-21
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: Patent in version 3.1
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: Recombinant IFNTau Based on Ovis aries Sequence
US-11-078-608-3
Query Match 100.0%; Score 907; DB 20; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CYLSERLMDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
Db 1 CYLSERLMDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
QY 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
Db 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120
QY 121 KKYFGIYDYLQEKGYSCAWEIVRVMRALTSTTLLQKRLTKMGDLNSP 172
Db 121 KKYFGIYDYLQEKGYSCAWEIVRVMRALTSTTLLQKRLTKMGDLNSP 172
RESULT 11
US-11-040-706-3
; Sequence 3, Application US/11040706
; Publication No. US20050226845A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of treatment using interferon-tau
; FILE REFERENCE: 55600-8014.US05
; CURRENT APPLICATION NUMBER: US/11/040,706
; CURRENT FILING DATE: 2005-01-21
; PRIOR APPLICATION NUMBER: US 10/884,741
; PRIOR FILING DATE: 2004-07-02
; PRIOR APPLICATION NUMBER: US 10/824,710
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; PRIOR APPLICATION NUMBER: US 10/825,068
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 10/825,382
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 10/825,457
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 6
; SOFTWARE: Patent in version 3.3
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: recombinant IFNTau based on Ovis aries sequence
US-11-040-706-3
Query Match 100.0%; Score 907; DB 20; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CYLSERLMDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
Db 1 CYLSERLMDARENKLLDRMNRSLPHSCLODRKDFGLPQEMVEGDQLQKQAFPLVYEM 60
QY 61 LQSFNLFYTEHSSAAWDTTLLLEQLCTGLQQLDHLDTCRGQVMEEDSELGNMDDPIVTV 120

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; CURRENT APPLICATION NUMBER: US/10/884,741
; CURRENT FILING DATE: 2004-07-02
; PRIOR APPLICATION NUMBER: US/10/824,710
; PRIOR FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: recombinant IFNtau based on Ovis aries sequence
US-10-884-741-3

Query Match      100.0%; Score 907; DB 17; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 C Y L S E R L M L D A R E N L K L D R M N R L S P H S C L O D R K D F G L P Q E M V E G D O L O K D Q A F P V L Y E M 60
Db 1 C Y L S E R L M L D A R E N L K L D R M N R L S P H S C L O D R K D F G L P Q E M V E G D O L O K D Q A F P V L Y E M 60

QY 61 L Q O S F N L F Y T H S S A A W D T T L L E Q L C T G L Q Q Q D H L D T C R G V M G E E D S E L G N M D P I V T V 120
Db 61 L Q O S F N L F Y T H S S A A W D T T L L E Q L C T G L Q Q Q D H L D T C R G V M G E E D S E L G N M D P I V T V 120

QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
Db 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172

RESULT 6
US-10-825-382-3
; Sequence 3, Application US/10825382
; Publication No. US20050118137A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of Treatment Using Interferon-TAU
; FILE REFERENCE: 55600-8014.US01
; CURRENT APPLICATION NUMBER: US/10/825,382
; CURRENT FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: recombinant IFNtau based on Ovis aries sequence
US-10-825-382-3

Query Match      100.0%; Score 907; DB 17; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 C Y L S E R L M L D A R E N L K L D R M N R L S P H S C L O D R K D F G L P Q E M V E G D O L O K D Q A F P V L Y E M 60
Db 1 C Y L S E R L M L D A R E N L K L D R M N R L S P H S C L O D R K D F G L P Q E M V E G D O L O K D Q A F P V L Y E M 60

QY 61 L Q O S F N L F Y T H S S A A W D T T L L E Q L C T G L Q Q Q D H L D T C R G V M G E E D S E L G N M D P I V T V 120
Db 61 L Q O S F N L F Y T H S S A A W D T T L L E Q L C T G L Q Q Q D H L D T C R G V M G E E D S E L G N M D P I V T V 120

QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
Db 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
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RESULT 7
US-10-825-457-3
; Sequence 3, Application US/10825457
; Publication No. US20050118138A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of Treatment Using Interferon-TAU
; FILE REFERENCE: 55600-8014.US02
; CURRENT APPLICATION NUMBER: US/10/825,457
; CURRENT FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: recombinant IFNtau based on Ovis aries sequence
US-10-825-457-3

Query Match      100.0%; Score 907; DB 17; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 61 L Q O S F N L F Y T H S S A A W D T T L L E Q L C T G L Q Q Q D H L D T C R G V M G E E D S E L G N M D P I V T V 120

QY 121 K K Y F Q G I Y D Y L Q E K G Y S D C A W E I V R V E M M R A L T V S T T L Q K R L T K M G G D L N S P 172
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RESULT 8
US-10-824-710-3
; Sequence 3, Application US/10824710
; Publication No. US20050142109A1
; GENERAL INFORMATION:
; APPLICANT: Liu, Chih-Ping
; APPLICANT: Villarete, Lorelie H.
; TITLE OF INVENTION: Method of Treatment Using Interferon-TAU
; FILE REFERENCE: 55600-8014.US00
; CURRENT APPLICATION NUMBER: US/10/824,710
; CURRENT FILING DATE: 2004-04-14
; PRIOR APPLICATION NUMBER: US 60/552,279
; PRIOR FILING DATE: 2004-03-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 3
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: recombinant IFNtau based on Ovis aries sequence
US-10-824-710-3

Query Match      100.0%; Score 907; DB 18; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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GenCore version 5.1.1.6
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OM protein - protein search, using sw model

Run on: October 28, 2005, 14:52:27 ; Search time 113 Seconds
(without alignments)
636.313 Million cell updates/sec

Title: US-10-719-472-3

Perfect score: 907

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Gapop 10.0 , Gapext 0.5

Searched: 1865214 seqs, 418043040 residues

Total number of hits satisfying chosen parameters: 1865214

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA:*

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- 21: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep.*
- 22: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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3	907	100.0	172	16	US-10-719-472-3
4	907	100.0	172	16	US-10-825-068-3
5	907	100.0	172	17	US-10-884-741-3
6	907	100.0	172	17	US-10-825-382-3
7	907	100.0	172	17	US-10-825-457-3
8	907	100.0	172	18	US-10-824-710-3
9	907	100.0	172	18	US-10-991-653-3
10	907	100.0	172	20	US-11-078-608-3
11	907	100.0	172	20	US-11-040-706-3

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13	899	99.1	172	10	US-09-910-406C-2	Sequence 2, Appli
14	899	99.1	172	14	US-10-029-890-2	Sequence 2, Appli
15	899	99.1	172	15	US-10-346-269-2	Sequence 2, Appli
16	899	99.1	172	15	US-10-346-269-3	Sequence 3, Appli
17	899	99.1	172	15	US-10-694-247-2	Sequence 2, Appli
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19	899	99.1	172	16	US-10-719-472-2	Sequence 2, Appli
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33	778	85.8	152	17	US-10-820-467-47	Sequence 47, Appli
34	727	80.2	195	9	US-09-908-594-11	Sequence 11, Appli
35	727	80.2	195	16	US-10-197-816-11	Sequence 11, Appli
36	653	72.0	171	14	US-10-131-409-58	Sequence 58, Appli
37	653	72.0	171	15	US-10-139-854-58	Sequence 58, Appli
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43	613	67.6	172	15	US-10-694-247-4	Sequence 4, Appli
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ALIGNMENTS

RESULT 1
US-09-910-406C-4
; Sequence 4, Application US/09910406C
; Publication No. US20030049277A1
; GENERAL INFORMATION:
; APPLICANT: Sokawa, Yoshiro
; APPLICANT: Liu, Chih-Ping
; TITLE OF INVENTION: Composition for Treatment of and Method
; of Monitoring Hepatitis C Virus Using Interferon-tau
; FILE REFERENCE: 5600-0004.30
; CURRENT APPLICATION NUMBER: US/09/910,406C
; CURRENT FILING DATE: 2002-07-02
; PRIOR APPLICATION NUMBER: JP 317160
; PRIOR FILING DATE: 2000-10-17
; PRIOR APPLICATION NUMBER: US 60/219,128
; PRIOR FILING DATE: 2000-07-19
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 172
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: recombinant IFNtau based on Ovis aries sequence
US-09-910-406C-4

Query Match 100.0%; Score 907; DB 10; Length 172;
Best Local Similarity 100.0%; Pred. No. 1.4e-88;
Matches 172; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CYLSERMLDARENKLLDRNNRSLPHSCLODRKDPGLPQEMVEGDQLQKQAFVLYEM 60
DB 1 CYLSERMLDARENKLLDRNNRSLPHSCLODRKDPGLPQEMVEGDQLQKQAFVLYEM 60